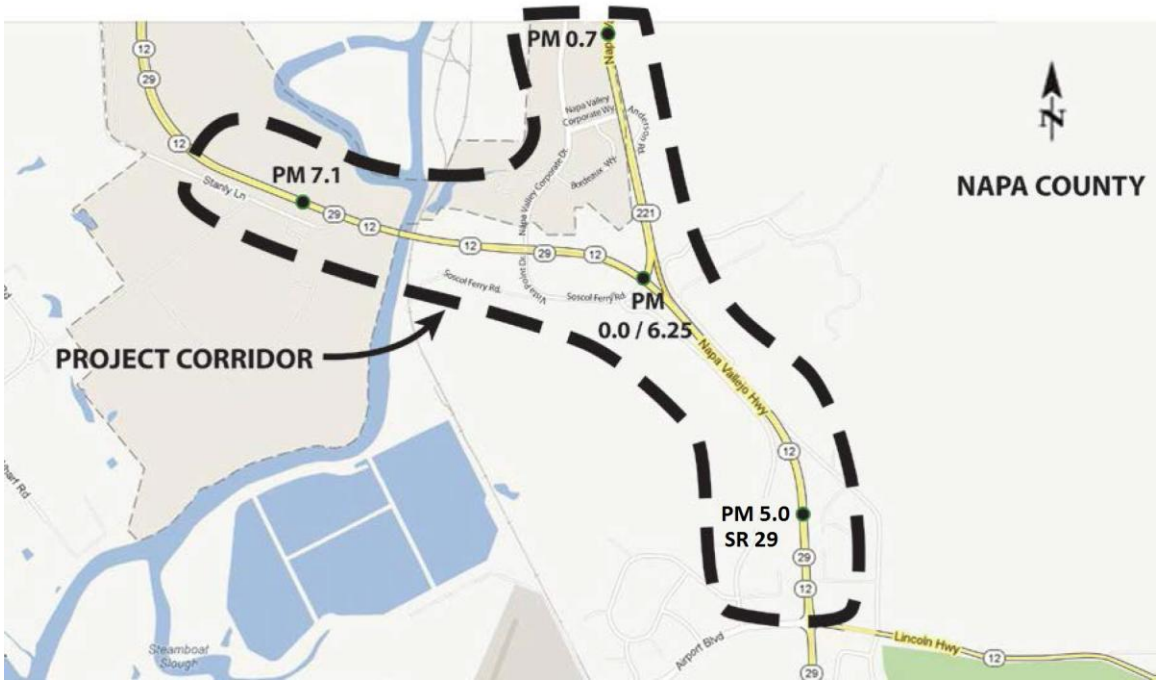
SR 29/221 Soscol Junction Improvement Project

NAPA COUNTY, CALIFORNIA
DISTRICT 4 - SR - 29 - PM 5.0 to PM 6.7 SR 221 - PM 0.0 to PM 0.6
EA 28120
SCH # 2009072094
EFIS # 0400000769

Draft Environmental Impact Report/ Environmental Assessment



Prepared by the
State of California Department of Transportation

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

March 2015

Caltrans

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans), 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 Napa County, California. Caltrans is the lead agency under the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). The document tells you why the project is being proposed, what alternatives we have considered for the project, how the existing environment could be affected by the project, the potential impacts of each of the alternatives, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read the document.
- Additional copies of the document, as well as copies of the technical studies we relied on in preparing the document, are available for review online at http://www.dot.ca.gov/dist4/envdocs.htm and at Caltrans District 4; 111 Grand Avenue, Oakland, California, at the Napa County Transportation and Planning Agency (NCTPA) at 707 Randolph Suite 100, Napa, CA 94559; the Napa Main Library at 5809 Coombs Street, Napa CA 94559 and the American Canyon Branch Library at 3421 Broadway, American Canyon, CA 94503.
- Attend the open house/public map display on **April 14, 2015** from **6:00 pm to 8:00 pm** at: 625 Burnell St, Napa, CA 94559
- We'd like to hear what you think. If you have any comments regarding the proposed project, please send your written comments to Caltrans by the deadline indicated below.
  - Submit comments via postal mail to:
    Stefan Galvez, Office Chief
    Division of Environmental Planning & Engineering
    California Department of Transportation
    111 Grand Avenue, Mail Station 8B
    Oakland, CA 94612
  - Submit comments via email to: Stefan.Galvez@dot.ca.gov
- Be sure to submit comments by the deadline: **May 9th, 2015**.

What happens next:

After comments are received from the public and reviewing agencies, Caltrans, as assigned by the Federal Highway Administration (FHWA), may: (1) give environmental approval to the proposed project, (2) do additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, then Caltrans 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 disk. To obtain a copy in one of these alternate formats, please call or write to Department of Transportation, Attn: Yolanda Rivas, Environmental Planning, 111 Grand Avenue, Oakland, CA 94612; (510) 286-6216 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

SCH # 2009072094

DISTRICT 4 - SR - 29 - PM 5.0 to PM 6.7 SR 221 - PM 0.0 to PM 0.6

EA 281200
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SR 29/221 Soscol Junction Improvement Project
Napa County, California

Draft Environmental Impact Report (CEQA)/Environmental Assessment (NEPA)

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

THE STATE OF CALIFORNIA
Department of Transportation

3-16-15
Date of Approval

Bijan Sartipi
District Director
California Department of Transportation

The following persons may be contacted for more information about this document:

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Summary

The proposed project is a joint project by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), and is subject to state and federal environmental review requirements.

Overview of the Project Area

State Route (SR) 29 and SR 221 meet at Soscol Ferry Road Junction and serve motorists traveling between Napa Valley and the Fairfield/Vallejo areas. SR 221 serves as an alternative to SR 29 into the City of Napa from the south. SR 221 and SR 29 serve as interregional, recreational, commercial, agricultural, and commuter routes.

Within the project limits, SR 29 is a part of the Freeway and Expressway System with two lanes in each direction, except for through the City of Napa where it turns into a six-lane freeway. SR 29 consists of a 7.7-foot (ft) shoulder and a 31.8-ft to 49.9-ft wide median. SR 12, from PM 0.0 to PM 6.7 overlaps SR 29 throughout the entire project area. For the purpose of this project, the highway will be referred to as SR 29 in this document to avoid confusion.

SR 221 represents the northern part of the Napa-Vallejo Highway and is a four-lane conventional divided highway with a 26.9-ft median and 6.9-ft. shoulders. SR 221 is 2.68 miles long and begins at SR 29/Soscol Ferry Road, 1 mile north of the SR 29/221 intersection (near Soscol Ferry Road PM 0.0), and continues north to SR 121 at Imola Avenue, (PM 4.2).

Purpose and Need

The purpose of the proposed Soscol Junction Project is to alleviate congestion and improve traffic operations at the Soscol Junction (SR 29/221/Soscol Ferry Road) Intersection. The signalized intersection of SR 221 and SR 29 is currently experiencing traffic congestion during a.m. and p.m. daily peak periods and is

operating at or near capacity. Traffic projections indicate that peak hour traffic volumes would increase by 29% and 32% on SR 29 and SR 221, respectively, by the year 2039. These projected traffic volumes would be significantly higher than the capacity of this intersection.

Proposed Action

In order to reduce congestion, the proposed action is to construct a connector from southbound (SB) SR 221 to SB SR 29 and modify the existing Soscol Ferry Road intersection. After identifying and eliminating a number of proposed project alternatives, the alternatives selected for further consideration are Alternative 5, Option 1; Alternative 5, Option 2; and the No Build Alternative.

Alternative 5, Option 1

Option 1 is to construct a 1.1-mile (mi) two-lane connector referred to as a 'flyover' from southbound (SB) SR 221 to SB SR 29, and re-align the SB 221 connection to SR 29 at the existing Soscol[1] Ferry Road intersection in Napa County. The leg of southbound SR 221 at the intersection would be reduced from three lanes (two left-turn lanes and one combined through and right-turn lane) to two lanes (one through lane and one right-turn lane). The limits of the proposed project on SR 29 are from North Kelley Road (PM 5.0) to 0.2 miles west of the SR 29/221/ Soscol Ferry Road intersection (PM 6.4), and on SR 221 from the existing SR 29/Soscol Ferry Road intersection (PM 0.0) to Anderson Road (PM 0.6).

Alternative 5, Option 2

Option 2 proposes to construct a flyover from SB SR 221 to SB SR 29 and a single lane connector from SB SR 221 to northbound (NB) SR 29 in Napa County. The leg of SR 221 and the existing signal at the Soscol Ferry Road intersection would be removed. The SR 29 median at the intersection would be closed, which would

[1] In the surrounding vicinity of the project two spellings of "Soscol" or "Suscol" are used locally, however not interchangeably. The "Suscol" spelling is used when referring to Suscol Creek. The "Soscol" spelling is used when referring to geographical place names, such as roads and bridges (i.e., Soscol Creek Bridge, Soscol Street Bridge, Soscol Ferry Road, Soscol Road, Soscol House). This document will follow this conventional usage.

eliminate all left-turn movements at the Soscol Junction Intersection. Through movement to Soscol Ferry Road would be eliminated. The limits of the proposed project on SR 29 are from North Kelly Road (PM 5.0) to the SR 29/Vista Point Drive/Napa Valley Corporate Drive Undercrossing (PM 6.7), and on SR 221 from the existing SR 29/Soscol Ferry Road intersection (PM 0.0) to Anderson Road intersection (PM 0.6).

No Build Alternative

The No Build Alternative is the No Action alternative and serves as a baseline to compare to the build alternatives. Current congested conditions would continue to worsen. The alternatives are further described later in the Alternative section. Alternatives that were considered but eliminated from further discussion are described in the Alternatives Considered and Withdrawn Section 1.5.

Joint CEQA/NEPA Document

The project is a joint project proposed by the California Department of Transportation (Caltrans) 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 NEPA. Caltrans is the lead agency under CEQA. In addition, 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 United States 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 receipt of comments from the public and reviewing agencies, a Final EIR/EA will be prepared. Caltrans may undertake additional environmental and/or engineering studies to address comments. The Final EIR/EA will include responses to comments received on the Draft EIR/EA and will identify the preferred alternative. If the decision is made to approve the project, a Notice of Determination will be published for compliance with CEQA, and Caltrans will decide whether to issue a Finding of No Significant Impact (FONSI) or require an Environmental Impact Statement (EIS) for compliance with NEPA. A Notice of Availability (NOA) of the FONSI will be sent to the affected units of federal, state, and local government, and to the State Clearinghouse in compliance with Executive Order 12372.

Project Impacts and Proposed Avoidance, Minimization and/or Mitigation Measures

The Summary of Potential Impacts Table (Table S-1) summarizes any possible impacts resulting from alternatives and identifies avoidance, minimization and/or mitigation measures and coordination with other agencies on the proposed project.

Costs, Funding and Programming

The funding for the technical studies for the proposed project was included in the Plan Bay Area (Project Reference No. 94073) and the 2013 TIP Revision 2013-04 (ID# NAP090003). The proposed improvements would not require any new right of way. The estimated capital construction cost for Alternative 5, Option 1 is $40 million and for Alternative 5, Option 2 is $39.9 million.

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Table S-1 Summary of Potential Impacts and Avoidance, Minimization and/or Mitigation Measures

The numbering system in this table will correspond to the impacts, if any, and avoidance, minimization and/or mitigation measures throughout Chapter 2 and Chapter 3.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
CC	***Human Environment***		
	Utilities		
CC-1	Relocation of lines in Caltrans Right-of-Way (ROW)	Same as Alternative 5, Option 1.	Development of utility relocation plans during the design phase to ensure no interruption of local services.
AV	***Visual/Aesthetics***		
AV-1	Permanent changes to the existing visual environment at the project site (the intersection of SR 29 and SR 221) would result from the visual presence of the proposed structural flyover and related elements of the project. Related elements include concrete columns and earth embankments to support the elevated lanes of the flyover, concrete retaining walls to contain the earth embankments, and additional pavement surfaces.	Same as Alternative 5, Option 1.	Cut and fill slopes should be contour graded to match the contours of adjacent, undisturbed topography to the extent feasible. Exposed ground surfaces should be hydro seeded with erosion control grasses and replanted with appropriate native tree and shrub species so as to match adjacent, undisturbed vegetation.
AV-2	Construction of a new flyover with its support columns, retaining walls, and approach embankments.	Same as Alternative 5, Option 1.	Retaining walls and flyover structures should be given a pattern, texture and/or color to minimize contrast with the existing setting and to reduce the potential for graffiti.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
AV-3	Tree and vegetation removal due to construction of the flyover	Same as Alternative 5, Option 1.	The existing trees near SB 121 that require removal for construction of the new connector ramp as part of Alternative 5, Option 2 should be replaced within the limits of the project. Oak and other native trees would be replaced at a ratio of 3:1. Non-native trees should be replaced at a 1:1 ratio. If there is an instance where a tree removal is considered both a biological and visual resource impact, then the greater of the two replacement ratios will be implemented.
AV-4	Construction operations: i.e. earthwork, pile driving (temporary), short term visual impacts due to temporarily exposed earth	Same as Alternative 5, Option 1.	During the period of construction, material and equipment should be screened to minimize visual exposure from roadways, the vista point, and the Soscol House. Staging areas for equipment and materials should be kept free of debris and clutter. Areas adjacent to work sites should be protected from contractor's operations. Lighting for night work should be placed and adjusted such that light is cast downward and confined to the immediate work area. Lights should be shielded to prevent stray light.
C	***Cultural Resources***		
	Archaeology		
C-1	Adverse effect to archaeological site CA-NAP-15/H due to proximity to construction.	Same as Alternative 5, Option 1.	Memorandum of Agreement (MOA) has been executed. Implement MOA to recover significant data that could be unearthed during construction. 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, State Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98 will be followed.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
	Paleontology		
C-2	Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impacts previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. Sensitive formations are present in the project area and excavation will extend into these formations.	Same as Alternative 5, Option 1.	A Paleontological Mitigation Plan will be prepared to define the specific mitigation measures and methods that will be implemented during construction.
B	***Biological Environment***		
	Natural Communities		
B-1	Potential removal, or cutting to stump level, of 76 trees, including 55 of which are native.	Same as Alternative 5, Option 1.	Construction activities would be limited to the smallest area possible. A clear delineation of the construction area will be incorporated into the project plans and specifications. Fencing will be installed to protect environmentally sensitive areas (ESAs) and confine workers and equipment to designated construction zones. ESA fencing will be placed 1m (3ft) from wetlands and willow trees occurring along SR 29, next to Sheehy Creek tributary. Impacts to the tree roots will be minimized by development of a pad composed of a temporarily placed suitable material that will protect the root systems. The pad will act as a buffer, more evenly dispersing the weight of the equipment over a greater surface area. This will reduce weight of the load directly over the root system, and thus minimize impacts to the trees. This pad will be removed once the work within the area is completed. Caltrans will mitigate 23 riparian trees at a 3:1 ratio on- or off-site and 53 non-riparian trees at a 1:1 ratio on- or off-site. Caltrans will plant a total of

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
			122 replacement trees. These trees will be planted in areas away from highway impacts. If there is an instance where a tree removal is considered both a biological and visual resource impact, then the greater of the replacement ratio will be implemented.
B-2	Clean Water Act (CWA) compliance	Same as Alternative 5, Option 1.	CWA 401 Permit from SFBRWQCB
	Animal Species		
B-3	Some Swainson's hawk {protected by the Migratory Bird Treaty Act (MBTA) and a listed threatened species under the California Endangered Species Act (CESA)} habitat near the project area may be taken/ impacted if the removal of trees on the bank of Suscol Creek occurs, however currently no known actively used nests occur within 600 feet of the project study area.	Same as Alternative 5, Option 1.	Consultation with CDFW will occur if any nest trees are taken/impacted. Hawk nest surveys will occur at least 1 breeding season prior to construction in order to be able to plan ahead. For active nests, no work will occur within 600 feet of Swainson's hawk nests, 300 feet of raptor species, and within 50 feet of other species protected under the Migratory Bird Treaty Act and California Fish and Game Codes 3503, 3513, and 3800.
B-4	Migratory birds may try to nest on the ground, on structures, or in trees, shrubs or other vegetation within the project limits.	Same as Alternative 5, Option 1.	In accordance with the Migratory Bird Treaty Act (MBTA), a survey of active migratory bird nests will be conducted in potentially affected trees and shrubs just prior to the beginning of construction. California Department of Fish and Wildlife (CDFW) will be notified of any occupied bird nests in impacted trees prior to their removal and Caltrans will work with CDFW to discuss relocation if necessary.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
			If construction is scheduled during the nesting season, which extends from February 15 through August 31 in Caltrans' Standard plans, Caltrans biologist will conduct pre-construction bird surveys before work begins. If the biologist determines that migratory birds are nesting within the zone of potential disturbance, then construction should be rescheduled to avoid the nesting season. If it is not possible to schedule construction to occur between September and the end of December, then the biologist, in consultation with the CDFW, shall determine the extent of a buffer zone. Work is not allowed within the buffer zones, but work can proceed in all other areas. An alternative measure will allow vegetation removal during the non-breeding season (Breeding season is February 15 to August 31).
	Special Status Plant & Animal Species		
B-5	Potential for temporary impacts to Central California Coast Steelhead (CCCS)	Same as Alternative 5, Option 1.	The following measures are intended to avoid the potential for temporary impacts to CCCS: Work in the Suscol Creek riparian area during low-flow periods between June 1 and October 31 to avoid impacts to CCCS during the migratory season. Store all equipment outside of Suscol Creek. Install a fence that will outline and protect ESAs prior to the start of construction, and remain on-site until job completion. Fence off any pools located in the project area during construction. Install silt fenced on the slopes adjacent to the work area to prevent silt

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
			from entering the watershed. The need for water diversion or dewatering is not anticipated. If it is determined that work within the wetted areas of Suscol Creek is necessary or that areas below OHWM may be affected, Section 7 consultation with NMFS will be initiated. Falsework beams that span the creek would be used in place of installing falsework piles into the stream channel. Erosion controls would be maintained during construction. All excess soil would be disposed of at an approved upland site. Caltrans would plant all slopes affected by the project with native grasses, shrubs, and trees to stabilize the slopes against erosion.
B-6	May disrupt dispersal, entrap, harass, and cause mortality to California Red Legged Frog (CRLF) due to impacts to CRLF potential habitat. May permanently impact 9.21 ac and temporarily impact 11.99 ac of CRLF potential habitat.	May disrupt dispersal, entrap, harass, and cause mortality to California Red Legged Frog (CRLF) due to impacts to CRLF potential habitat. May permanently impact 9.15 ac and temporarily impact 12.82 ac of CRLF potential habitat.	For seasonal avoidance of the CRLF, construction will not occur from November 1 through May 31 near drainages rated as high quality CRLF aquatic habitat to the maximum extent practicable. Suitable habitat would be avoided with the use of ESA fencing. Caltrans proposes to mitigate temporary impacts at a 1:1 ratio. Mitigation would be on-site through site restoration. The remainder would be mitigated through the purchase of credits at a mitigation bank. For permanent impacts, Caltrans proposes to mitigate all impacts off-site at a 3:1 ratio through purchasing credits at a mitigation bank. Caltrans will seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS) and will implement appropriate avoidance and minimization measures. Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
B-7	The project would affect Contra Costa Goldfield (CCGF) Critical Habitat. 4.63 ac would be permanently affected and 2.78 ac would be temporarily affected.	The project would affect Contra Costa Goldfield Critical Habitat. 3.23 ac would be permanently affected and 2.85 ac would be temporarily affected.	During Project Development, Caltrans redesigned a portion of the project to avoid impacts to the CCGF. Environmentally Sensitive Area (ESA) fencing will be used to protect CCGF and CCGF Critical Habitat. This area will be clearly marked to avoid inadvertent encroachment of personnel or equipment. Caltrans will seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS). Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area. Erosion control measures will be implemented to minimize the potential for stormwater runoff or other construction debris to enter suitable habitat adjacent to the construction zone. No hydro modification will occur to the vernal pools with CCGF east of SR 221.Construction-related dust will be managed using Caltrans standard BMPs, including water trucks and appropriate speed limits**.**

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
	Wetlands and Other Waters if the U.S.		
WW-1	Permanent impacts to 0.03 ac of wetlands and temporary impacts to 0.13 ac of wetlands.	Same as Alternative 5, Option 1.	Temporary and permanent impacts to wetlands and waters will be avoided to the fullest extent feasible. Mitigation for waters and wetlands permanently impacted by the project is proposed at a 1:1 ratio. Temporary impacts areas will be reseeded and regraded on-site to pre-project conditions at a 1:1 ratio. Caltrans will obtain an USACE 404 Nationwide Permit 14 and a 1602 Streambed Alteration Agreement from the CDFW.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
	Permanent impacts to 0.01 ac of Waters of the U.S. and temporary impacts to 0.05 ac of Waters of the U.S.	Permanent impacts to 0.02 ac of Waters of the U.S. and temporary impacts to 0.05 ac of Waters of the U.S.	
N	***Noise***		
N-1	Construction activities for the proposed project could result in noise levels greater than the existing noise levels. Construction noise is unavoidable and could temporarily adversely affect some nearby members of the public during daytime hours.	Same as Alternative 5, Option 1.	Caltrans Standard Specifications for construction contracts include the following noise abatement measures to minimize construction noise impacts: All construction equipment may be required to conform to the provisions in Section 14-8.02 of the latest edition of Standard Specifications to minimize noise from construction activities such as maintaining equipment mufflers in proper operating order.
T	***Traffic and Transportation***		
	Traffic		
T-1	Temporary traffic delays and disruptions due to construction.	Same as Alternative 5, Option 1.	Complete a Traffic Management Plan (TMP) to plan detours and utilize Information Technology Systems (ITS), and public advisory tools to inform motorists for trip planning purposes.
AQ	***Air Quality***		
AQ-1	Temporary impact during construction due to dust emissions and construction vehicle exhaust.	Same as Alternative 5, Option 1.	Application of standard measures recommended by the Bay Area Air Quality Management District (BAAQMD); and compliance with BAAQMD and state regulations. Best Management Practices (BMPs) may be used. See Appendix D for complete list.

	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 1	POTENTIAL ENVIRONMENTAL IMPACT Alternative 5, Option 2	AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES
HM	***Hazardous Materials***		
HM-1	Construction activities could result in workers becoming exposed to ADL due to disturbance of the surface soil adjacent to the roadway.	Same as Alternative 5, Option 1.	A soil investigation will be conducted to determine to what extent ADL has affected soils that will be excavated as part of the proposed project. This investigation will include screening for additional metals and some organic compounds, such as fuel hydrocarbons and pesticides, to confirm, or refute, the supposition that there are no contamination issues related to them. The investigation for ADL will be performed in accordance with the Department's Lead Testing Guidance Procedure. The analytical results will be compared against applicable hazardous waste criteria. Based on analytical results, the investigation will provide recommendations regarding management and disposal of affected soils in the project area, including the reuse potential of ADL-affected soil during project construction. The provisions of a variance granted to Caltrans by the California Department of Toxic Substances Control (DTSC) in July 2009 (or any subsequent variance in effect when the project is constructed) regarding ADL-affected hazardous waste soil will be followed. The construction contractor will be required to utilize a certified industrial hygienist-approved lead compliance plan to disclose the presence of lead-impacted soil and to provide measures and practices for minimizing worker exposure.

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List of Abbreviations and Acronyms

ABAG	Association of Bay Area Governments
ADL	aerial deposited lead
APE	area of potential effect
ASR	Archaeological Survey Report
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practices
BO	Biological Opinion
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCCS	Central California coastal steelhead
CCGF	Contra Costa Goldfields
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cm	centimeter
CNDDB	California Natural Diversity Database
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CRLF	California red-legged frog
CWA	Clean Water Act
EA	Environmental Assessment
EIR	Environmental Impact Report
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
dbh	Diameter at breast-height
dBA	decibel
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impacts

ft	foot/feet
FTA	Federal Transit Administration
FWS	freshwater shrimp
GHG	Greenhouse Gas
ha	hectare
HASR	Historical Architecture Survey Report
HPSR	Historical Property Survey Report
IGR	Inter-Governmental Review
ILV	Intersection Lane Vehicles
in	Inch(es)
ITS	Information Technology System
km	kilometer(s)
KP	kilometer post
kph	kilometer(s) per hour
LOS	Levels of service
MAX	Maximum Extent Practicable
m	meter(s)
MCE	Maximum Credible Earthquake
Mi	mile(s)
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
mph	miles per hour
MTC	Metropolitan Transportation Commission
NCTPA	Napa County Transportation and Planning Agency
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
OHWM	Ordinary High Water Mark
PA/ED	Project Approval/ Environmental Document
PG&E	Pacific Gas & Electric Company
PM	post mile
POAC	Project of Air Quality Concern

PS&E	Project Specifications and Estimates
PSR	Project Study Report
ROW	right of way
RTP	Regional Transportation Plan
RTIP	Regional Transportation Improvement Plan
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board-
SHPO	State Historic Preservation Office
SR	State Route
STIP	State Transportation Improvement Project
TIP	Transportation Improvement Plan
TMP	Traffic Management Plan
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VINE	Napa-Valley fixed route bus system
VMT	vehicle miles traveled

Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) proposes to improve traffic movement at the Soscol Ferry Road, SR 221 and SR 29 intersection by constructing a 1.1-mile two-lane connector referred to as a 'flyover' from southbound SR 221 to southbound SR 29 at North Kelly Road in Napa County. This proposed project is called the "Soscol Junction Project."

The funding for the technical studies for the proposed project was included in the Metropolitan Transportation Commission's (MTC) federally required Transportation Improvement Program (TIP), as described in the Plan Bay Area (Project Reference No. 94073) and the 2013 TIP Revision 2013-04 (ID# NAP090003). The TIP listing will be revised to include project design funds before the final environmental document is approved. The estimated capital construction cost for Alternative 5, Option 1 is $40 million and $39.9 million for Alternative 5, Option 2. The proposed project would be constructed in either three or four stages, depending on the construction method chosen by the contractor, and would take approximately two years to complete.

SR 221 and SR 29 are important east-west links that meet at the Soscol Junction Intersection and serve motorists traveling between Napa Valley and the Fairfield/Vallejo areas. SR 221 and SR 29 serve as interregional, recreational, commercial, agricultural, and commuter routes. Within the project limits, SR 29 is a part of the Freeway and Expressway System with two lanes in each direction, except through the City of Napa where it turns into a six-lane freeway. SR 29 consists of a 7.7 ft shoulder and a 31.8 ft to 49.9 ft wide median. For the purpose of this study, SR 29 overlaps SR 12 in the project area.

SR 221 represents the northern part of the Napa-Vallejo Highway and is a four lane conventional divided highway with a 26.9 ft median and 6.9 ft shoulders, SR 221 is 2.68 miles long and begins at SR 29/Soscol Ferry Road, one mile north of the SR

29/221 intersection (near Soscol Ferry Road (PM 0.0)), and continues north to SR 121 at Imola Avenue, (PM 4.2).

1.2 Purpose and Need

The purpose of the proposed Soscol Junction Project is to alleviate congestion and improve operations at the SR 29/221 intersection.

The need has arisen due to congestion and delays from motorists traveling on State Routes 29 and 221 in recent years as commercial and residential developments cluster along the highways in the southern portion of Napa County, while the winery and tourism industries are expanding rapidly in the northern part of the county. Napa County attracts more than five million visitors a year; 1.7 million stay overnight. Coupled with population growth in Solano County to the east and Sonoma County to the west, both highways have become major interregional routes serving the neighboring counties. Growth of residential development in the Fairfield/Suisun Valley area of Solano County, and of industrial and commercial development in Napa County is expected to continue. The existing highways provide insufficient capacity and routine rehabilitation improvements do not address changes in traffic volume. Congested intersections are intersections that cause drivers considerable delay.

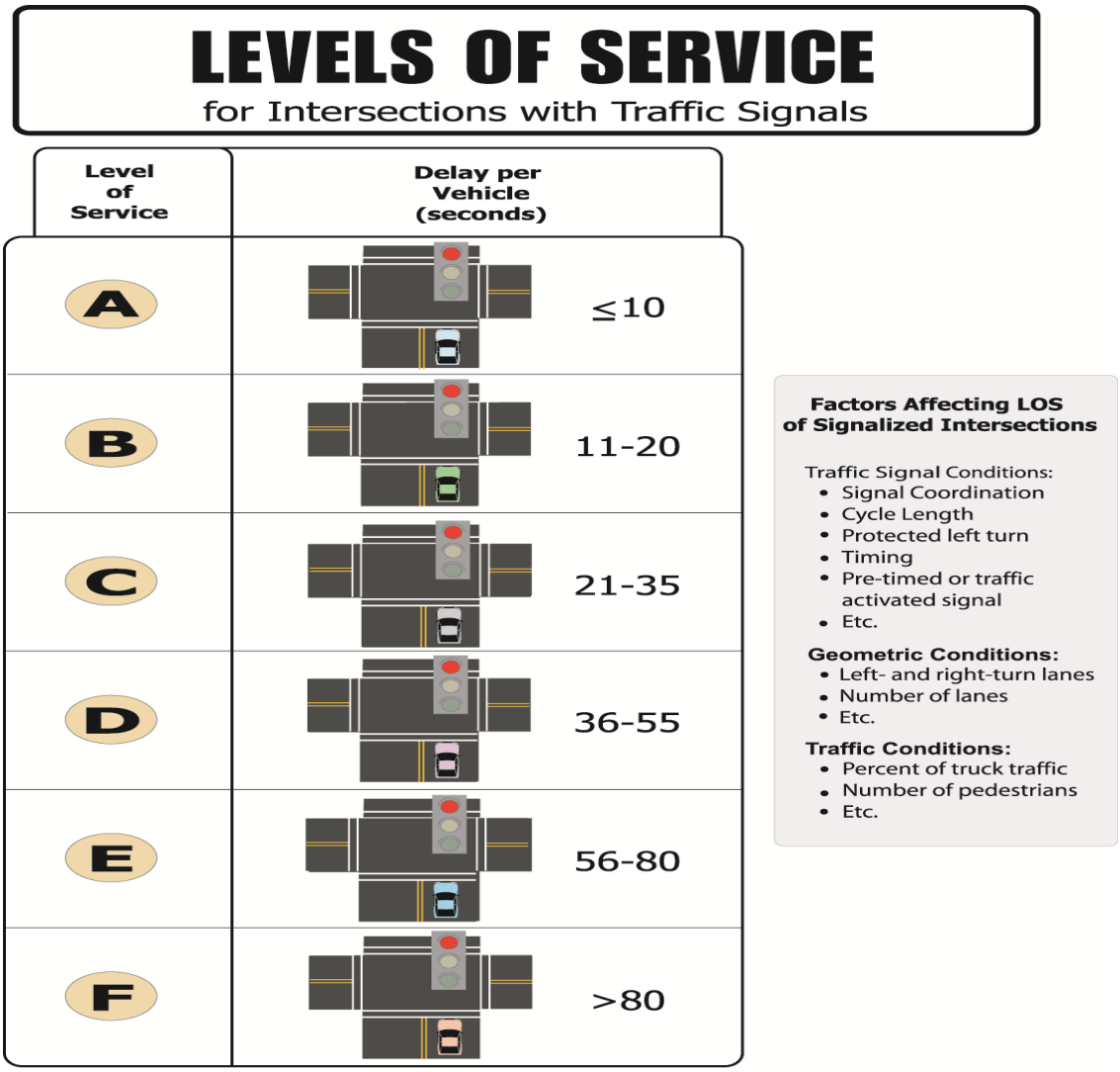
Table 1-1 Existing Conditions at Soscol Junction

Intersection	Existing Conditions			
	AM Peak		PM Peak	
	Delay in seconds (sec)	LOS	Delay in sec	LOS
SR 29/221/Soscol Ferry Road (Soscol Junction)	54	D	151	F
Source: Office of Highway Operations memo " Soscol Junction Project, Years 2019 and 2039 Analyses of Impacts With Napa Pipe Project August 2, 2013				

The level of service (LOS) is a method used to categorize traffic flows for a given roadway segment using letters A through F, with A being the best and F being the

worst. The proposed project's existing delays received "D" and "F" ratings for existing AM Peak and PM Peak delays, respectively. To better understand the measurement system, refer to the table below for a better understanding of how many seconds of delay fit into each letter ranking.

Figure 1-1 Levels of Service



Source: 2000 HCM, Exhibit 16-2, Level of Service Criteria for Signalized Intersections

Thus, with a AM Peak rating of "D", vehicles on average are delayed almost a full minute, and PM Peak "F" demonstrates vehicles experiencing a delay of two and a half minutes. This would only continue to worsen because, according to the Metropolitan Transportation Commission's (MTC) Travel Forecast Data Summary,

daily trips between Napa and Solano Counties from Year 2006 to Year 2039 are expected to experience a 50% increase in volume.

The signalized intersection of SR 221 and 29 is currently experiencing traffic congestion during AM and PM weekly peak periods and is operating at or near capacity. Traffic projections indicate that peak hour traffic volumes will increase by 29% and 32% on SR 29 and SR 221, respectively, by the year 2039. These projected traffic volumes will be significantly higher than the capacity of this intersection. As a result of the increased volumes, traffic delays at the SR 29/221/Soscol Ferry Road intersection are anticipated to increase between now and year 2039. Currently, the AM peak period experiences an average delay of 54 seconds and the PM peak period experiences an average delay of 151 seconds. By the year 2039, the delay is anticipated to increase to 433 seconds during the AM peak period and 395 seconds during the PM peak period. The year 2039 projected LOS is “F” for both the AM and PM peak periods.

Accident Data

Accident record data from January 1, 2006 to December 31, 2008 indicates that there were 53 accidents at the SR 221 and SR 29 intersection with a total accident rate of 0.59, which is over the statewide average rate of 0.55 for similar facilities. In general, the majority of the accidents at the intersection were highway congestion related.

Independent Utility and Logical Termini

The proposed project would provide congestion relief and traffic flow improvements that are not dependent upon other capacity increasing or operational improvements in the vicinity. Neither is it a segment of a larger project or a commitment to a larger project with significant environmental effects. Therefore, the proposed project has ‘independent need and utility.’ The proposed project also has logical termini, meaning that the project limits have been reasonably set to achieve the improvements required to meet the project’s Purpose and Need.

1.3 Project Description

There are two Build Alternatives being considered for the proposed project, **Alternative 5, Option 1,** and **Alternative 5, Option 2** which are described below:

Alternative 5, Option 1

For **Option 1**, a flyover would be constructed from southbound SR 221 to SR 29. The SB 221 connection to SR 29 at the Soscol Ferry Road intersection will be re-aligned and the number of traffic lanes would be reduced from three lanes to two lanes The limits of the proposed project on SR 29 are from North Kelly Road PM 5.0 to 0.2 miles west of the SR 221/Soscol Ferry Road intersection (PM 6.4), and on SR 221 from the existing SR 29/Soscol Ferry Road intersection (PM 0.0) to Anderson Road (PM 0.6).

Alternative 5, Option 2

For **Option 2**, a flyover would be constructed from southbound SR 221 to SR 29. The leg of SR 221 and the existing signal at the Soscol Ferry Road intersection will be removed. It would be replaced with a single-lane connector from SB SR 221 to NB SR 29. The SR 29 median at the intersection would be closed, which would eliminate all left-turn movements at the Soscol Junction intersection. Through movement to Soscol Ferry Road would be eliminated. The abandoned road would be reclaimed with vegetation. The limits of the proposed project on SR 29 are from North Kelly Road (PM 5.0) to the Napa Valley Corporate Drive Undercrossing (PM 6.7), and on SR 221 from the existing SR 29/ Soscol Ferry Road intersection (PM 0.0) to Anderson Road intersection (PM 0.6).

1.4 Alternatives

This section describes the proposed Build Alternatives that are being proposed to meet the Purpose and Need. These alternatives include avoidance and minimization measures, which will be described later. The No Build Alternative is also described

here and in addition to constituting an alternative, provides a baseline in which to compare the Build alternatives.

Proposed in both Build alternatives is a flyover (see Figure 1-2 below) connecting southbound SR 221 to southbound SR 29. The flyover would provide a dedicated southbound movement and accommodate the existing and projected heavy southbound traffic, thereby reducing the delay that motorists currently experience and are projected to experience into 2039. The flyover would allow southbound travelers on SR 221 to reach SB SR 29 without going through the traffic signal at Soscol Junction, as is the current condition.

Figure 1-2 Proposed Flyover Structure

The flyover would consist of two lanes, a bridge over Suscol Creek and the existing SR 29, and roadway embankments on both ends. The existing dual left-turn traffic at the SR 29/221/Soscol Ferry Road intersection would be re-routed onto the flyover. The proposed project would be constructed in either three or four stages, depending on construction method chosen by the contractor, and would take approximately two years to complete. The alternatives under consideration are ***Alternative 5, Option 1; Alternative 5, Option 2; and the No Build Alternative.***

Alternative 5, Option 1

For Option 1, the limits of the proposed project on SR 29 are from North Kelley Road (PM 5.0) to 0.2 miles west of the intersection of SR 29/ 221/ Soscol Ferry Road (PM 6.4), and on SR 221 from the existing SR 29/Soscol Ferry Road Intersection (PM 0.0) to Anderson Road (PM 0.6).

Alternative 5, Option 1 would include the following elements:

- Construct a two-lane connector ramp referred to as a flyover from southbound SR 221 to southbound SR 29. The proposed connector would consist of a bridge in the middle over Suscol Creek, beginning from southbound SR 221 and then would fly over SR 29, with roadway embankments on both ends where the structure touches down. The flyover bridge would be approximately 1,592 ft long, with retaining walls on both approaches.
- Use an 8 ft diameter, cast-in-drilled-hole (CIDH) concrete pile as foundation for the single columns of the bridge. The bridge would be supported by single columns to minimize the effects on the riparian area; there would be a total of eight columns for the flyover bridge.
- Construct a nine-span box-girder type structure with single column bents that would be supported on an 8 ft CIDH concrete pile. Two of the bents near Suscol Creek would be installed outside of the top of the bank, outside of the riparian zone, and outside of the ordinary high water (OHW).
- Pile drive up to about 46 ft deep in order to install structure supports.
- Extend a 24-in diameter culvert by approximately 10 ft to approximately 83 ft in the ephemeral stream located west of SR 221 at PM 0.22.

In addition to the above elements, the project would consist of the following non-structural elements:

- The existing signal at the SR 29/221/Soscol Ferry Road intersection would remain in place, but the dual left-turn traffic at the intersection would be re-routed onto the flyover.
- Construct a double-lane southbound (SB) connector (from the flyover) from SB SR 221 to the existing Soscol Ferry Road and SR 29/221 intersection.
- Re-stripe SB 221 at SR 29 intersection from three lanes to two lanes.
- Relocate waterlines from the American Canyon and Napa Water districts, underground gas mains, overhead and underground power lines from Pacific Gas and Electric (PG&E); protect fiber optics from AT&T. Longitudinal utilities conflicting with construction would be relocated outside State Right of Way.

Caltrans would incorporate permanent treatment BMPs to reduce the rate of stormwater discharge and treat pollutants using the best available technology including, but not limited to, biostrips and bioswales. Stormwater treatment BMPs would be located on areas where soil disturbance would occur due to construction activities. In addition, sections of the local connector roads that are abandoned as a result of the left-turn lane closure would be closed off and the resulting area would be reclaimed with new vegetation to control erosion in these areas.

The traffic movement would be as follows:

- The left-turn signals at the Soscol Junction Intersection would be eliminated.
- Left turns from SB SR 221 to SB SR 29 at the intersection would be eliminated, through movements from SB 221 to Soscol Ferry Road and right turn from SB SR 221 to NB 29 would remain.

Construction

It is anticipated that the project would be built in three or four stages, depending on construction method chosen by the contractor, and take approximately two years. Generally, during all stages of construction, the existing number of lanes on SR 29 and SR 221 would be maintained.

During construction, Caltrans would require temporary construction easements on both sides of SR 29 at Soscol Ferry Road. Excluding environmentally sensitive areas (ESAs), areas in the project vicinity within the State right of way would potentially be used for turnouts, haul roads, borrow, disposal, and stockpiling. The city streets, Napa Valley Corporate Way and Napa Valley Corporate Drive, may be used for traffic detour and for the construction of the flyover.

There would be no permanent structures constructed within the riparian corridor of Suscol Creek. Falsework would be required to free-span over the creek during construction of the flyover superstructure. The average depth of CIDH pile would be approximately 46 ft deep. The bridge height would be about 26 ft above SR 29; the soffit height would be at about 23 ft.

Construction site BMPs would be implemented during construction to manage dust, turbidity, air pollution and water pollution including sediment and Ph.

.

Caltrans would use the following equipment for construction work:

- Drill rig and slurry displacement storage tank for the construction of the CIDH Piles.
- Cranes for lifting pile or column bar reinforcing cages, forms, falsework beams, etc.
- Miscellaneous construction vehicles (pick-ups, concrete trucks, concrete pump trucks).
- Earthmoving equipment such as backhoes and dozers for the embankment construction and subsequent structure excavations.

Alternative 5, Option 2

For Option 2, the limits of the proposed project on SR 29 are from North Kelly Road (PM 5.0) to the Napa Valley Corporate Drive Undercrossing (PM 6.7) and on SR 221

from the existing SR 29/Soscol Ferry Road intersection (PM 0.0) to Anderson Road (PM 0.6). This alternative is similar to Option 1, except for what is described below:

Alternative 5, Option 2 would include the following elements:

- Construct a two-lane connector referred to as a flyover from southbound SR 221 to southbound SR 29/Soscol Ferry Road intersection. The proposed connector would consist of a bridge in the middle over Suscol Creek, beginning at SR 221 and fly over SR 29, with roadway embankments on both ends where the structure touches down. The flyover bridge would be approximately 1,044 ft long.
- Construct a six-span box-girder type structure with single column bents.
- A single-lane connector would be constructed from SB SR 221 to NB SR 29 to replace the existing right-hand turn.
- The median at the intersection of SR 29 and SR 221 would be closed.
- A 24-in diameter culvert would be installed underneath the new connector from SB SR 221 to NB SR 29.

Caltrans would incorporate permanent treatment BMPs to reduce the rate of stormwater discharge and treat pollutants using the best available technology including, but not limited to, biostrips and bioswales. Stormwater treatment BMPs would be located on areas where soil disturbance would occur due to construction activities. In addition, sections of the local connector roads that are abandoned as a result of the left-turn lane closure would be closed off and the resulting area would be reclaimed with new vegetation to control erosion in these areas.

The traffic movement would be as follows:

- The signaled intersection would be eliminated
- Left turns at the intersection SR 29/221 and through movements from SB 221 to Soscol Ferry Road or vice-versa would be eliminated.

Construction

It is anticipated that the project would be built in three or four stages, depending on construction method chosen by the contractor, and take approximately two years. Generally, during all stages of construction, the existing number of lanes on SR 29 and SR 221 would be maintained.

During construction, Caltrans would require temporary construction easements on both sides of SR 29 at Soscol Ferry Road. Excluding environmentally sensitive areas (ESAs), areas in the project vicinity within the State right of way would potentially be used for turnouts, haul roads, borrow, disposal, and stockpiling. The city streets, Napa Valley Corporate Way and Napa Valley Corporate Drive, may be used for traffic detour and for the construction of the flyover.

There would be no permanent structures constructed within the riparian corridor of Suscol Creek. Falsework would be required to free-span over the creek during construction of the flyover superstructure. The average depth of CIDH pile would be approximately 46 ft deep. The bridge height would be about 26 ft above SR 29; the soffit height would be at about 23 ft.

Construction site BMPs would be implemented during construction to managedust, turbidity, air pollution and water pollution including sediment and Ph.

Caltrans would use the following equipment for construction work:

- Drill rig and slurry displacement storage tank for the construction of the CIDH Piles.
- Cranes for lifting pile or column bar reinforcing cages, forms, falsework beams, etc.
- Miscellaneous construction vehicles (pick-ups, concrete trucks, concrete pump trucks).
- Earthmoving equipment such as backhoes and dozers for the embankment construction and subsequent structure excavations.

No Build Alternative

This alternative maintains the existing conditions as no other transportation improvement projects have been identified or programmed for this intersection.

The No-Build Alternative would include the following elements:

- The Soscol Junction Intersection would remain as is - a four-way traffic signal connecting SR 29, SR 221 and Soscol Ferry Road.
- The existing signal at the SR 12/29/221/Soscol Ferry Road intersection would remain in place.
- SB 221 at SR 29 would remain three lanes (two left-turn lanes and one combined through and right-turn lane).
- All existing utilities would remain in place.
- Aerially Deposited Lead (ADL) material would not be disturbed.

Construction

No other transportation improvement projects have been identified or programmed for this intersection. The No Build Alternative would not meet the purpose and need of the project, however, it serves as a baseline against which to compare the proposed Build Alternatives. Tables 1-2 and 1-3 show a comparison of the No Build and Build Alternatives in terms of improvements, traffic patterns, effect on existing congestion and delay, and cost. The main similarity between the Build Alternatives is the effect of the proposed project on existing congestion and delay.

Table 1-2 Comparison Design Features of Improvements of Alternatives

Alternative 5, Option 1	**Alternative 5, Option 2**	**No Build**
Improvements		
Construct a 1.1 mi two-lane flyover over Suscol Creek, SR 29, NB SR 221.	Construct a 1.1 mi two-lane flyover over Suscol Creek and SR 29.	No improvements
The flyover bridge would be nine-span and be approximately 485 m (1,592 ft) long with retaining walls on both approaches.	The flyover bridge would be six-span and be approximately 318 m (1,044 ft) long with retaining walls on southern approach.	
Construct a double-lane connector southbound off-ramp from the flyover to the existing Soscol Ferry Rd and SR 29/221 intersection.	Construct a single-lane connector from SB SR 221 to NB SR 29	
Re-stripe southbound SR 221 at SR 29 to two lanes.	Remove SR 221 connection at the SR 29/221/Soscol Ferry Road intersection.	

Table 1-3 Comparison of Differences in Design Features of Alternatives

Changes in Traffic Patterns		
The median at the intersection of SR 29 and SR 221 would remain open and the signaled intersection would stand as is.	The median at the intersection of SR 29 and SR 221 would be closed off and the signaled intersection would be eliminated.	No change
All turn movements, except for the left-turns from southbound SR 221 to southbound SR 29, would remain in place. The left-turn from SR 221 to SR 29 would now be on the flyover.	Left turns at the SR 29/221 intersection and the through movement from southbound SR 221 to Soscol Ferry Rd or vice-versa would be eliminated.	
Effect on Existing Congestion and Delay		
Reduction in congestion, delay, and peak-period travel times. Similar benefit under both designs.		Congestion would worsen over time as planned growth continues.
Cost		
$40 million (To be finalized before final environmental document is signed).	$39.9 million (To be finalized before final environmental document is signed).	$0

Preferred Alternative

After the public circulation period, all comments will be considered, and Caltrans will select a preferred alternative and make the final determination of the proposed project's effect on the environment. In accordance with CEQA, Caltrans will certify that the project complies with CEQA, prepare findings for all significant impacts identified, prepare a Statement of Overriding Considerations for impacts that will not

be mitigated below a level of significance, and certify that the findings and Statement of Overriding Considerations have considered prior to project approval. Caltrans will then file a Notice of Determination with the State Clearinghouse that would identify whether the project would result in significant impacts, if mitigation measures were included as conditions of project approval, that findings were made, and that a Statement of Overriding Considerations was adopted. Similarly, Caltrans, as assigned by FHWA, determines the NEPA action does not significantly impact the environment; Caltrans will issue a Finding of No Significant Impact (FONSI) in accordance with CEQ regulations or prepare an Environmental Impact Statement (EIS).

1.5 Alternatives Considered But Eliminated From Further Discussion

The Project Study Report (PSR), approved on September 29, 2000, identified and evaluated four alternatives (Alternatives 1 through 4) for the proposed flyover project. Additional alternatives were later identified and evaluated in the Preliminary Value Analysis Report, submitted February 18, 2004; two of these additional alternatives were further considered and evaluated (Alternatives 5 and 6). After eliminating the majority of alternatives from further consideration, in November 2008 Caltrans Design further developed Alternative 5 into three options: Alternative 5, Option 1; Alternative 5, Option 2; Alternative 5, Option 3. These options were presented to Napa County, the City of Napa, and the Napa County Transportation and Planning Agency (NCTPA) on December 4, 2008.

Alternatives 1 and 2

Alternative 1: Two-lane flyover connector from SB 221 to SB 29 crossing SR 29 and Soscol Ferry Road west of at-grade SR 29/ 221/Soscol Ferry Road intersection.

Alternative 2: Two-lane flyover connector from SB 221 to SB 29 crossing SR 221 and SR 29 east of at-grade SR 29/ 221/Soscol Ferry Road intersection.

Alternatives 1 and 2 proposed to build a two-lane flyover connector from SB 221 to SB 29. The flyover structure passes through locations identified as having biological, historical, and pre historic resources. The alternatives require constructing a lengthy structure (1060 feet long) for passing over either SR 29 and Soscol Ferry Road or SR 221 and SR 29 and constructing a structure over Suscol Creek. Both alternatives proposed a SB left exit connection to Soscol Ferry Road. They do not conform to Caltrans' basic design policy for freeway entrances and exits (Section 504.2, Highway Design Manual), which states, "All freeway entrances and exits, except for direct connections with median high occupancy vehicles lanes, shall connect to the right of through traffic." These alternatives were eliminated due to mandatory highway design policy requirement, significant environmental and cultural resource impacts and high construction cost due to an excessively long structure.

Alternative 3 and 4

Alternative 3: Two-lane flyover connector from SB 221 to SB 29 merging from the left on SR 29 and crossing SR 221 and NB 29 east of at-grade SR 29/ 221/Soscol Ferry Road intersection. Shift SB SR 29 to southwest.

Alternative 4: Two-lane flyover connector from SB 221 to SB 29 merging from the left on SR 29 and crossing SR 221 and NB 29 east of at-grade SR 29/221/Soscol Ferry Road intersection. Shift southbound SR 29 to the northeast.

Alternatives 3 and 4 are similar. Both alternatives proposed to build a two-lane flyover connector from SB 221 to SB 29 merging from the left on SR 29. The alternatives require constructing a lengthy structure (1060 feet) for passing over both SR 221 and NB 29 and constructing a structure over the Suscol Creek. These alternatives proposed a SR 221 exit and a SR 29 entrance on the left of through traffic. They were eliminated due to Highway Design Manual restrictions (Section 504.2, Highway Design Manual), which states, "All freeway entrances and exits, except for direct connections with median high occupancy vehicles lanes, shall

connect to the right of through traffic.", a significantly higher cost than the other build alternatives for construction of an excessively long structure and costs for shifting the alignment of the SB 29 to southwest or northeast with the associated new right of way requirement.

Alternative 5, Option 3

Alternative 5, Option 3: included the construction of a flyover structure from SB SR 221 to SB SR 29 with the removal of the current left-turn movement at the SR 29/SR 221 intersection.

The option is similar to Alterative 5, Option 2. A shorter structure from SB 221 to SB 29 and a connector from SB 221 to SB 29 was proposed. In addition to median closure on SR 29 and removal of the signals, complete removal of the leg of Soscol Ferry Road and SR 221 at the intersection is proposed. The traffic movements would have been as follows: left turns, right turns and through movements on Soscol Ferry Road and SR 221 at the intersection would all be eliminated to facilitate the traffic throughput on SR 29. This option was eliminated because through access to nearby roads is substantially reduced.

Alternative 6

The alternative proposed to build two-lane flyover from SB 221 that over crosses SR 29 and merges to SB 29 and a connector from SB 221 to NB 29 with closure of legs of SR 221 and Soscol Ferry Road and removal of existing signals at the existing SR 29 intersection. At Napa Valley Corporate Drive /Vista Point Drive overcrossing, the project proposed to build four ramps to tie the local road to SR 29 to form a diamond interchange.

The alternative was developed during the Value Analysis study performed in January and February of 2004 (value analysis alternative 2.1). After further studies, the cost estimate for this alternative increased to $65 M and the proposed interchange at Napa Valley Corporate Drive / Soscol Ferry Road did not meet the

interchange spacing requirement of one mile. This option was eliminated due to the high construction cost and interchange spacing requirements.

Figure 1-3 Project Vicinity

Legend

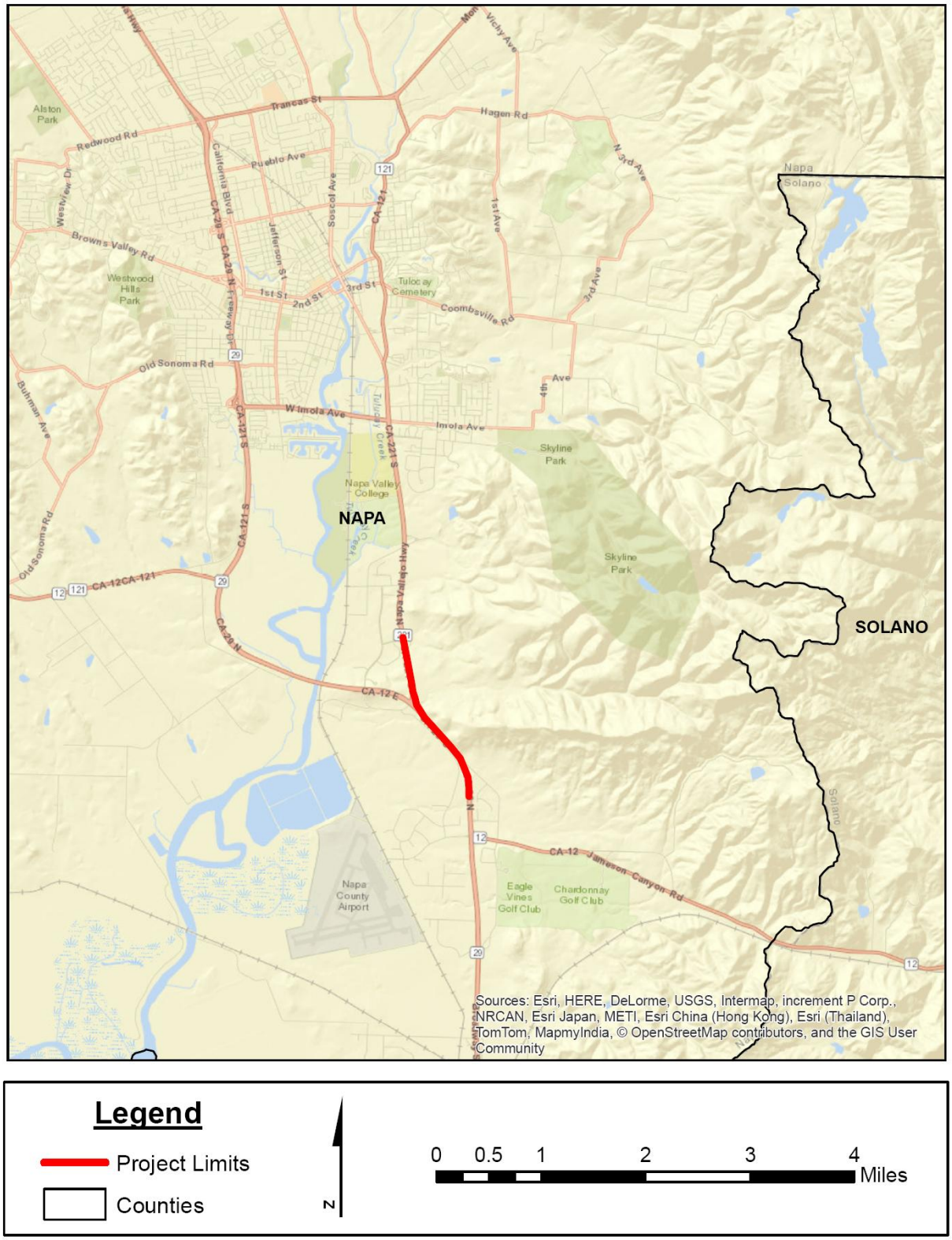
Project_Location

Counties

N

0 5 10 20 30 40 Miles

Figure 1-4 Project Limits



Legend

Project Limits

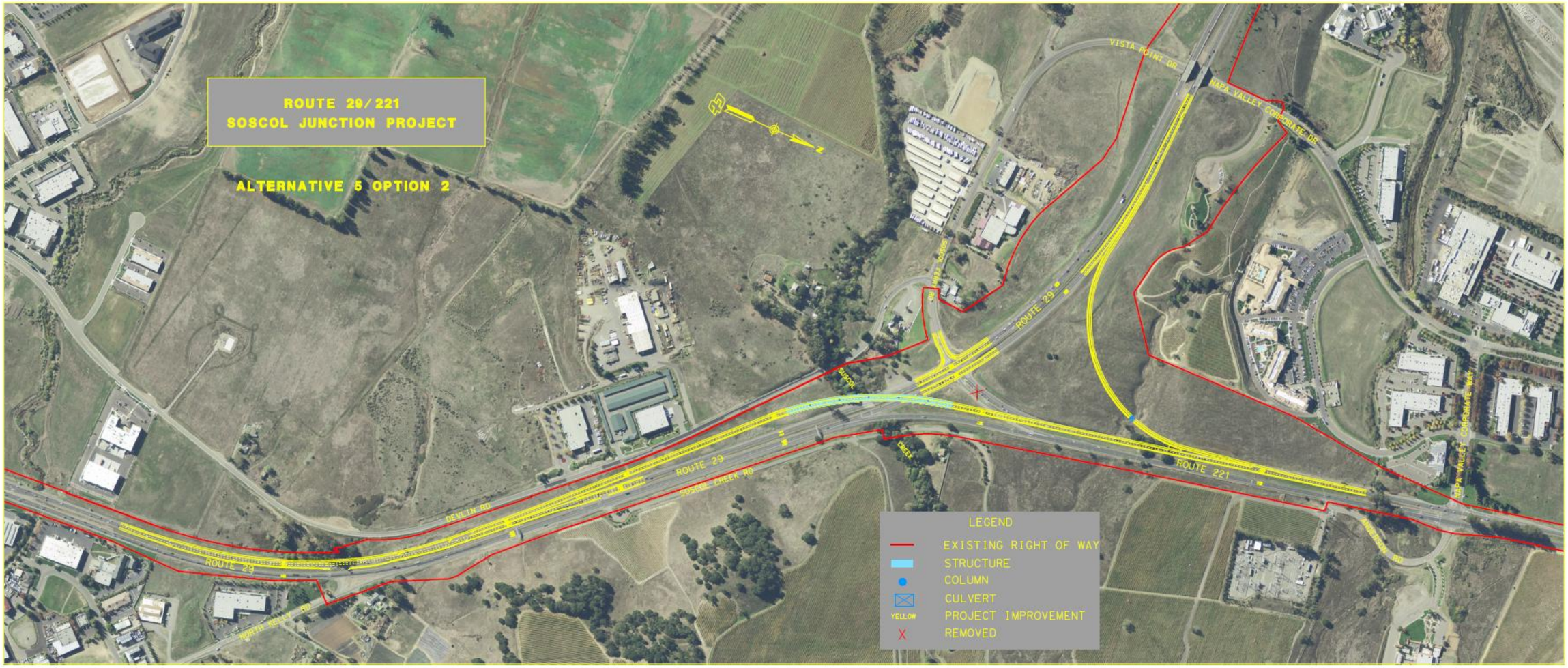
Counties

N

0 0.5 1 2 3 4 Miles

Figure 1-5 Alternative 5, Option 1 Aerial

Figure 1-6 Alternative 5, Option 2 Aerial



Permits and Approvals

Table 1-4 demonstrates the permits required for project approval. The timeliness of obtaining the permits and the agencies that are responsible for providing approval are listed below:

Table 1-4 Permits and Approvals

Agency	Permit/Approval	Status
California Department of Fish and Wildlife (CDFW)	Section 1602 Lake and Streambed Alteration Agreement	Obtained during Plans, Specifications & Estimates (PS&E) Phase
Regional Water Quality Control Board – San Francisco Bay (SFBRWQCB)	Clean Water Act Section 401 Water Quality Certification Permit	Obtained during PS&E Phase
US Army Corps of Engineers (USACE)	Clean Water Act Section 404 Nationwide Permit 14	Obtained during PS&E Phase
US Fish and Wildlife Service (USFWS)	Section 7 Consultation for Threatened and Endangered Species; Review and Comment on 404 Permit	A Biological Assessment (BA) will be submitted by Caltrans to USFWS post circulation of Draft EIR/EA. USFWS then provides a Biological Opinion (BO).

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

This chapter presents the results of Caltrans' analysis of environmental issues relevant to this project. Issues were identified by reviewing applicable federal requirements and by completing the California Environmental Quality Act (CEQA) checklist, a copy of which can be found in Appendix A. Guidelines, standards, and/or protocols mentioned in this chapter are incorporated by reference from the technical studies upon which the information presented here is based.

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

Table 2-1 provides a brief explanation for the "no adverse impact" determination for these resources. The remainder of the chapter covers environmental issues that require further consideration or discussion.

Table 2-1 No Adverse Impact Determination Summary

AGRICULTURAL RESOURCES/ FARMLANDS
The project will neither convert farmland to non-agricultural use or conflict with current open space or agriculture land use designations.
COASTAL ZONE and WILD AND SCENIC RIVERS
The project is located outside of coastal zones. There are no wild and scenic rivers that traverse the project area.
MINERAL RESOURCES
The project does not conflict with resource recovery plans or operations in the vicinity.
PARKS AND RECREATION
There are no publicly owned parks, recreation areas, or wildlife or waterfowl refuges that border or are near the project area.
RELOCATIONS AND REAL PROPERTY ACQUISITIONS
The proposed project will not cause the relocation and/or displacement of any households. The proposed project is to be constructed within Caltrans right-of-way.

2.1 HUMAN ENVIRONMENT

2.1.1 EXISTING AND FUTURE LAND USE

Affected Environment

Existing land uses in the vicinity of the proposed project are primarily Agriculture Watershed and Open Space (AWOS), northeast of SR 29 and SR 221; Industrial, south of Soscol Ferry Road; and Public Institutional, south of SR 29.

Table 2-2 below shows existing and future land use in the surrounding project area. The table depicts the name of the project, the project type, the current status of the project, and the land use within the project area. Refer to the Growth Section 2.1.2 for a detailed discussion on development trends.

Table 2-2 Existing and Future Land Use

	Project and Location	Project Type	Project Status	Land Use Within Project Area
1	Jameson Canyon Widening Project Napa County – SR 12 KP 0.4/5.3 (PM 0.2/3.3) Solano County – SR 12 KP 0.0/R4.2 (PM 0.0/R2.6) & State Routes 29/12 Interchange Project Napa County – SR 29 KP 6.7/8.7 (PM 4.2/5.4) & SR 12 KP 0.0/0.4 (PM 0.0/0.2)	Transportation	Approved Undergoing Revalidation	• Transportation • Rangeland • Residential • Agricultural • Industrial • Urban Open Space
2	Montalcino at Napa Resort Hotel (71.77 acres) Devlin Rd	Commercial	Approved	• Industrial
3	Montalcino at Napa Golf Course (233 acres) Devlin Rd, Soscol Ferry Rd	Recreation	Approved	Request to rezone from Agricultural to Public Lands
4	Suscol Creek Winery (10.32 acres) South side of Soscol Ferry Rd, west of Hwy 29	Industrial, Agricultural	Approved	• Industrial
5	Napa Gateway Plaza (12.92 acres) Gateway Rd East/ Devlin Rd/ Airport Blvd	Mixed Use	Approved Hotel Completed Bank/Office Built	• Industrial
6	St. Regis Parcel at Stanly Ranch (93 acres) Stanly Lane & Hwy 12/121	Commercial	Approved	Request to rezone from Agricultural to Commercial
7	Hussey Ranch (Hidden Hills) Subdivision (87.7 acres) 1061 Patrick Rd at Broadmoor Road	Residential	Under Construction, 50% Completed	• Residential • Agricultural
8	Busby Winery (1.28 acres) West side of Technology Way, south of Morris Ct.	Industrial, Agricultural	Approved	• Industrial

9	Busby Enterprises Industrial Condominiums (2.4 acres) Devlin Rd @ Sheehy Ct	Industrial	Approved	• Industrial
10	Greenwood Commerce Center (20.7 acres) Southwest corner of Airport Blvd & Devlin Rd & (34 acres) Southwest corner of Airport Blvd & SR 29	Residential, Industrial	Approved Pending	• Industrial
11	Napa Pipe Redevelopment (154 acres) Northwest of the SR 121/29 junction	Mixed Use	Approved (Final EIR)	Request to rezone from Industrial to Mixed Use (Residential, Commercial)
12	Suscol Mountain Vineyards (568 acres) Approximately 1 mile east of Hwy 221, and 1 mile north of Hwy 12	Industrial, Agricultural	Approved	• Agricultural • Watershed & Open Space • Mineral Resource
13	Anderson Subdivision (Oak Leaf) (11.54 acres) 1060 Wyatt Ave	Residential	Under Construction, 50% Completed	• Residential • Open Space
14	Mondavi Vineyards (101 acres) East side of SR 221/ Napa-Vallejo Hwy	Agricultural	Completed	• Agricultural
15	Walkenhorst Warehouse/Office Building (3.5 acres) Southwest corner of Technology Way and Technology Court	Industrial	Pending	• Industrial
16	Arroyo Creek Vineyard (32.2 acres) East of SR 221/Kaiser Rd Intersection	Agricultural	Completed	• Agricultural • Watershed & Open Space
17	Suscol Ranch – JPV – Vineyards (29.61 acres) Northeast of SR 221/Kaiser Rd	Agricultural	Completed	• Agricultural • Watershed & Open Space
18	Devlin Road Extension and Sheriff Station Southeast of Devlin Rd/ Soscol Ferry Rd junction	Transportation, Industrial	Completed	• Transportation • Industrial
19	The Village at Vintage Ranch (11.56 acres) Northeast corner of SR 29 & American Canyon	Residential	Approved	• Residential

	Rd			
20	Vintage Ranch (18.3 acres) SR 29 & Donaldson Way	Residential, Parkland	Under Construction	• Residential • Agricultural
21	Stanly Ranch Vineyards (708 acres) Stanly Lane	Mixed Use	Completed	Request to rezone from: • Study Area to Resource Area & • Planned Community to Agricultural
22	Napa Junction (18 acres) SR 29 and Napa Junction Rd	Mixed Use	Phase I & II Complete Phase III Approved	• Industrial
23	Lombard Crossing Industrial Park (25 acres) Northeast corner of American Canyon Rd and SR 29	Industrial	Approved	• Open Area • Industrial •
24	Powerscreen Facility (2.4 acres) 5381 Broadway, North of Green Island Rd	Industrial	Approved	• Industrial
25	Biagi Brothers Jackson Wine Estate Distribution Warehouse Green Island Rd & Jim Oswalt Way	Industrial	Under Construction	• Industrial
N/A	Napa County General Plan Throughout Napa County	Other	Approved	• Residential • Commercial • Industrial • Open Space • Agricultural • Farmland and Rangeland • Transportation
26	River Park Marina Bank Maintenance Repairs Cabot Way, Marina Dr, S. Jefferson St, River Park Blvd	Other	1st Phase 90% Completed,	• Residential

CONSISTENCY WITH REGIONAL, and LOCAL PLANS and PROGRAMS

- **Regional Transportation Plan (RTP):** The RTP is the regional transportation development guide for a 25-year period. The RTP is updated every four years and is based on projections of growth in population and travel demand coupled with financial projections. The development of an RTP is required by state and federal laws. Funding for the technical studies for the proposed project is listed in the Metropolitan Transportation Commission's (MTC) *Plan Bay Area* as Reference Number 94073. (http://www.mtc.ca.gov/planning/plan_bay_area/). The *Plan Bay Area* suggests improvements to the SR 29/221 intersection, including a new flyover connecting SB SR 221 to SB SR 29.

- **Transportation Improvement Program (TIP):** The TIP is the primary spending plan for federal funding that is expected within the region. The TIP must be updated at least once every four years and covers a four- or five-year period. Funding for the proposed project's technical studies is listed under TIP ID NAP090003 in the 2011 Transportation Improvement Program (TIP), which was adopted by the Metropolitan Transportation Commission (MTC) on October 27, 2010, and by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on December 14, 2010.

- **Local Planning:** The Napa County Transportation Planning Agency's (NCTPA) 1999 Strategic Transportation Plan states that major intersection improvements are needed at the SR 29/221 intersection and additional capacity is recommended for southbound SR 221. Additionally, the proposed project is specifically included in Napa County's list of planned improvements in the Circulation Element of the Napa County General Plan (June 2008- http://www.countyofnapa.org/GeneralPlan/). The 1974 Freeway Agreement with Napa County for SR 29 indicates that SR 29 is to become a freeway in the future and SB SR 221 is to be on the new alignment connecting to SB SR 29. The proposed project is consistent with all the above-mentioned local plans.

Refer to Table 2-2 for Existing and Future Land Use within the Project Area.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2 and No Build Alternative:

Table 2-3 outlines the policies that are applicable to the proposed project and their consistency with the Build Alternatives and No Build Alternative. Both Build Alternatives are consistent with the state, regional and local plans and programs. However, the No Build Alternative is not.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2 and No Build Alternative:

Land use in the area would be unaltered by the build or no build alternatives of the proposed project.

Table 2-3 Consistency with State, Regional, and Local Plans and Programs

Policy	Alternative 5, Option 1	Alternative 5, Option 2	No Build Alternative
Regional Transportation Plan (RTP)			
Key performance objectives: • *to reduce per-capita delay,* • *to reduce fine particulate matter,* • *to reduce carbon dioxide emissions*	**Consistent** The proposed project at the Soscol Junction Intersection would meet the key performance objectives by improving traffic operations at the Soscol Junction Intersection. By reducing congestion at the intersection, there will be a reduction of fine particulate matter and carbon dioxide emissions. Additionally, the proposed project is listed in the Metropolitan Transportation Commission's (MTC) *Transportation 2035 Plan* (April 2009) as Reference Number 94073. Thus, the project is consistent with the most recent Regional Transportation Plan (RTP) - http://www.mtc.ca.gov/planning/2035_plan/.	**Consistent** The proposed project at the Soscol Junction Intersection would meet the key performance objectives by improving traffic operations at the Soscol Junction Intersection. By reducing congestion at the intersection, there will be a reduction of fine particulate matter and carbon dioxide emissions. Additionally, the proposed project is listed in the Metropolitan Transportation Commission's (MTC) *Transportation 2035 Plan* (April 2009) as Reference Number 94073. Thus, the project is consistent with the most recent Regional Transportation Plan (RTP) - http://www.mtc.ca.gov/planning/2035_plan/.	**Not Consistent** The No Build Alternative would not meet the key performance objectives as traffic conditions are predicted to continually worsen at the Soscol Junction.
Transportation Improvement Plan (TIP)			
All projects included in the MTC-prepared TIP must be consistent with the RTP for the Bay Area.	**Consistent** The proposed project is listed under TIP ID NAP090003 in the 2011 Transportation Improvement Program (TIP), which was adopted by the MTC on October 27, 2010, and by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on December 14, 2010. Consequently, the proposed project is consistent with the TIP.	**Consistent** The proposed project is listed under TIP ID NAP090003 in the 2011 Transportation Improvement Program (TIP), which was adopted by the MTC on October 27, 2010, and by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on December 14, 2010. Consequently, the proposed project is consistent with the TIP.	**Not Consistent.** The No Build Alternative would not meet the key performance objectives as traffic conditions are predicted to continually worsen at the Soscol Junction Interchange. As it is not consistent with the RTP, it is not consistent with the TIP.
NCTPA's 1999 Strategic Transportation Plan			

Major intersection improvements are needed at the SR 29/221 intersection and additional capacity is recommended for SB SR 221.	**Consistent.** The proposed project would make the recommended improvements at the SR 29/221 intersection.	**Consistent.** The proposed project would make the recommended improvements at the SR 29/221 intersection.	**Not Consistent.** The No Build Alternative would not make the suggested improvements at the SR 29/221 intersection.
Napa County General Plan (adopted June 2008)			
*Policy CIR-13 states: "*The County seeks to provide a roadway system that maintains current roadway capacities in most locations and is both safe and efficient in terms of providing local access."	**Consistent.** Intersection improvements at the Soscol Junction Intersection are listed under Policy CIR-13. The proposed project would make the recommended improvements at the SR 29/221 intersection. The proposed project would maintain the current roadway capacity and provide safe and efficient local access.	**Consistent.** Intersection improvements at the Soscol Junction Intersection are listed under Policy CIR-13. The proposed project would make the recommended improvements at the SR 29/221 intersection. The proposed project would maintain the current roadway capacity and provide safe and efficient local access.	**Not Consistent.** The No Build Alternative would not make the suggested improvements at the SR 29/221 intersection.
NCTPA's Napa County Bicycle Plan (adopted January 2012) and Napa Valley Vine Trail as a components of the Countywide Bicycle Plan Update			
Developed to increase bicycle travel by addressing the most common reasons people do not use bicycles, including lack of convenience and perceived safety concerns. This is to reduce congestion and greenhouse gas emissions due to automobile traffic.	**Consistent.** The proposed project would be consistent with the plan to reduce greenhouse gas emissions by reducing congestion because the daily and annual CO_2 emissions would be reduced under either Build Alternative compared to the No Build Alternative. Bicycle access is prohibited along SR 29 within the proposed project area. This condition would continue for all alternatives. Under either alternative, SR 221 serves as an alternative to SR 29 for motorists and bicyclists into the City of Napa. From the City of Napa, bicyclists can travel southbound along SR 221/Kaiser Road, which continues as Devlin Road to SR 29/221/12 at Airport Road.	**Consistent.** The proposed project would be consistent with the plan to reduce greenhouse gas emissions by reducing congestion because the daily and annual CO_2 emissions would be reduced under either Build Alternative compared to the No Build Alternative. Bicycle access is prohibited along SR 29 within the proposed project area. This condition would continue for all alternatives. Under either alternative, SR 221 serves as an alternative to SR 29 for motorists and bicyclists into the City of Napa. From the City of Napa, bicyclists can travel southbound along SR 221/Kaiser Road, which continues as Devlin Road to SR 29/221/12 at Airport Road.	**Not Consistent.** The No Build Alternative would not meet the key performance objectives as traffic conditions are predicted to continually worsen at the Soscol Junction Interchange.

2.1.2 GROWTH

The following section is based upon the *Growth-Inducing Impacts of the Soscol Flyover Improvement Project* (May 11, 2009), amended September 2011. A memorandum was prepared in September 2014 after Caltrans re- reviewed the study and reached the decision that it was still current. This study and subsequent amendment and memorandum are available for review upon request.

Regulatory Setting

The Council on Environmental Quality (CEQ) regulations, which established the steps necessary to comply with the National Environmental Policy Act of 1969 (NEPA), require evaluation of the potential effects of all proposed federal activities and programs. This includes a requirement to examine indirect effects, which may occur in areas beyond the immediate influence of a proposed action and at some time in the future. The CEQ regulations, 40 CFR 1508.8, refer to these consequences as indirect impacts. Indirect impacts may include changes in land use, economic vitality, and population density, which are all elements of growth. The California Environmental Quality Act (CEQA) also requires the analysis of a project's potential to induce growth. The CEQA guidelines (Section 15126.2[d]), require that environmental documents "… discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

Affected Environment

The local economy of Napa County is historically based on agriculture (ranching and orchards), and secondarily on tourism/hospitality. Napa Valley has emerged as one of the foremost winemaking regions in the world, and its fastest growing employment sectors continue to be the wine growing industry and related tourism. Napa Valley is now one of California's premier tourist destinations, attracting more than 5 million visitors annually, of which close to 40% stay overnight in local lodging.

While the industries of wine/grape-growing, wine production and tourism are expanding in the northern parts of Napa County, the southern portions of Napa are also growing from

commercial and residential developments clustered along State Routes 29 and 221 (refer to Table 2-3 for a list of approved projects in the project vicinity.

The Napa County General Plan (Revised by Napa County, 2009) contains major policies for population and growth management that concentrate development within the urbanized areas while preserving the agricultural and rural character of land outside the urban centers. Based on population and household trends, the County has successfully focused growth in urbanized cities compared to unincorporated areas. Declines in population and the number of households in unincorporated areas contrast in comparison to increases in these areas in Napa County as a whole (Napa County Housing Element Update, Draft Housing Needs Assessment, March 24, 2014). The Soscol Junction intersection is located in an unincorporated area of the Napa Valley through which many visitors, commuters, and goods transporters pass through to reach the City of Napa and other regional destinations.

Environmental Consequences

Alternative 5, Option 1:

Because transportation enables the movement of individuals and goods from one location to another, transportation improvements can affect both the attractiveness of potential destinations and ease of reaching them. As the purpose of the Soscol Junction Project is to reduce congestion and wait times at the intersection, the proposed project would affect the ease of reaching other destinations. Changes in accessibility to employment, residences, attractions, shopping, and other destinations can have the potential to influence growth by rendering certain areas more attractive to development (Caltrans Guidance for Preparers of Growth-Related, Indirect Impacts Analysis, Section 3.1 Caltrans Guidance or external reference source). Because of this link between transportation and land uses Caltrans considers potential project-related changes in accessibility within the project study area to assist in the determination of whether the project could influence growth (Caltrans Guidance for Preparers of Growth-Related, Indirect Impacts Analysis). Caltrans determined that while the project may improve overall access through intersections within the study area, its influence on growth would be very minor.

Caltrans' evaluation included consideration of anticipated project-related changes in traffic delays within an 8-intersection study area (refer to Figure 2-16). Using Caltrans Guidance for Preparers of Growth-Related, Indirect Impacts Analysis, Caltrans Growth Inducement Study was prepared in 2009 and updated in September 2011. The results are summarized below:

The Soscol Junction intersection is a transfer point for motorists traveling any direction to and from the City of Napa or to the northern or southern part of the county. Under the Build Alternatives, the Soscol Junction intersection would continue serving the same travel directions, at the same capacity, and would not favor any particular travel direction. Based upon this analysis, the proposed project would not influence the location of future development through reductions in delay.

Accessibility can also influence the location of future development through increased roadway capacity at an intersecting point such as Soscol Junction, or by providing access to areas currently lacking transportation infrastructure. Under the proposed project, transportation improvements at Soscol Junction do not increase capacity to the interconnecting Routes 29 or 221 under either Build Alternative. Although access through the Soscol Junction intersection would be improved, new transportation infrastructure such as an intersection or interchange would not be created. The proposed project would not create an alternate access route nor create a bypass to the current Soscol Junction intersection. Consequently, the proposed project would not influence accessibility in a manner that would lead to future development in either undeveloped or underdeveloped locations.

In addition to transportation, growth is generally influenced by multiple factors, including but not limited to: population and economic growth, desirability of certain locations, the cost and availability of developable land, physical and regulatory constraints, and the costs of sewer and water services. The cities and County of Napa have decision making authority over land use in terms of location, amount, type and rate of development pursuant to their respective plans and policies. The implementation of these policies has strongly influenced urban-centered growth, as demonstrated by declining population and average household

sizes in unincorporated areas compared to the rest of the county. Furthermore, Napa County projects that the average annual growth rate for population and average household size in unincorporated areas would continue to decrease at a rate of -0.6% and -0.1% respectively (Table 1, Napa County Housing Element Update, Draft Housing Needs Assessment, March 24, 2014). Therefore, despite the improvements to accessibility that the Soscol Junction project would provide, Napa County policies and land use restrictions would temper growth inducing effects, if any, in terms of location, amount and type of development. Furthermore, the influence of increased accessibility that the proposed project would provide would not alter the average annual growth rates that the County has outlined.

For the above reasons, the proposed project is not expected to influence growth in terms of location, amount, type, or rate of development.

Alternative 5, Option 2: Growth-related impacts under Alternative 5, Option 2 would be the same as under Alternative 5, Option 1.

No Build Alternative: Growth would continue in Napa County based upon the *Revised 2009 Napa County General Plan and Proposed Housing Element Update, March 2014*.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 and Alternative 5, Option 2: No avoidance, mitigation, or minimization measures are proposed.

***No Build Alternative*:** No avoidance, mitigation, or minimization measures are proposed.

2.1.3 COMMUNITY IMPACTS (see below)

2.1.4 COMMUNITY CHARACTER AND COHESION

Regulatory Setting

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

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

Affected Environment

A socioeconomic profile of the area surrounding the proposed project can be gained by reviewing land use plans, growth policies and demographic statistics from the *Revised 2009 Napa County General Plan*. The project setting or "affected environment" is defined as including the immediate project area and the surrounding vicinity. For the purposes of analyzing community impacts, the study area has been defined as the two census tracts 2010.03 and 2010.05 that are immediately adjacent to the Soscol Junction Intersection, which can be viewed online at

http://www2.census.gov/geo/maps/dc10map/tract/st06_ca/c06055_napa/DC10CT_C06055_002.pdf.

Caltrans existing right-of-way within the project area includes the roadway, shoulders, median and existing roadway structures. Existing land uses in the vicinity of the proposed project are primarily Agriculture Watershed and Open Space (AWOS), northeast of SR 29 and SR 221; Industrial, south of Soscol Ferry Road; and Public Institutional, south of SR 29.

While there were 12,652 households in the project study area, there are no homes immediately adjacent to the Soscol Intersection.

Based on the Association of the Bay Area Government's (ABAG) *Projections* 2009, employment in Napa County is expected to increase more rapidly than the population, with a 29.3 percent increase in jobs anticipated between 2010 and 2035 and only a 7.2 percent increase in population. This increase in employment may indicate an improvement in the jobs/housing balance within Napa County, but projections emphasize continued demand for travel to and from Napa County along SRs 29, 12 and 221.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2:

No neighborhoods, community facilities, schools or churches would be impacted by the proposed project. Because the locations of the Build Alternative elements are within existing Caltrans right of way, there is no "neighborhood" that would be divided or whose access would be impeded.

Based on the above discussion and analysis, the proposed project would not cause any adverse effects on human-made resources, community cohesion, and the availability of public facilities and services. The proposed project would not change the feel of the neighborhood, or make it more difficult for community members to access residences, businesses or religious institutions.

Although there is a disproportionately larger population of Asians, there would be no adverse impacts to their community character and cohesion because the proposed project would be improving the existing intersection; it would not be re-aligned outside of Caltrans right of way.

No Build Alternative: Under the No Build Alternative, there would be no impacts to Community Character and Cohesion.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: No avoidance, mitigation, or minimization measures are proposed.

***No Build Alternative*:** No avoidance, mitigation, or minimization measures are proposed.

2.1.5 ENVIRONMENTAL JUSTICE

Regulatory Setting

All projects involving a federal action, such as funding, permit, or licensing, must comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President William J. Clinton on February 11, 1994. This EO directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal actions on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law. Low income is defined based on the Department of Health and Human Services poverty guidelines. For 2013, this is $22,350 for a family of four.

All considerations under Title VI of the Civil Rights Act of 1964 and related statutes have also been included in this project. Caltrans commitment to upholding the mandates of Title VI is demonstrated by its Title VI Policy Statement, signed by the Director, which can be found in Appendix B of this document.

Affected Environment

The project study area used for analysis of environmental justice is based on the 2010 census tracts; it encompasses the two census tracts that are immediately adjacent to the project area (tracts 2010.03 and 2010.05).

With the exception of household income within the study area, 2010 census information was used to determine the ethnic composition and household income for this analysis. At the time this document was written, the 2010 census information for household income within the study area was available, so 2010 census data was used.

Ethnic Composition

The project study area includes a variety of neighborhoods and multi-ethnic populations, as do Napa County and the City of Napa. The study area has a larger non-white population (45.8%) than the City or County of Napa (24.9 % and 28.5 %, respectively) (Table 2-4). While overall the largest non-white readily identifiable population is Hispanic, this population in the study area is lower (25.8%) than in the City (37.6%) and County (32.2%).

The approximately 13,518 persons living in the census tracts that comprise the study area exhibit a diverse ethnic composition. With 45.8 percent ethnic minorities, the study area has a higher percentage of minorities than Napa County, with 28.5 percent, or the City of Napa, with 24.9 percent ethnic minority populations.

Table 2-4 Ethnic Composition

Ethnic Population and Percentage Composition			
Ethnicity	**Project Study Area**	**City of Napa**	**County of Napa**
White	7,333	57,754	97,525
	54.2%	75.1%	71.5%
Black or African American	853	486	2,668
	0.6%	0.6%	2.0%
Hispanic	3,485	28,923	44,010
	25.8%	37.6%	32.2%
Asian	2,869	1,755	9,223
	21.2%	2.3%	6.8%
American Indian/ Alaska Native	99	637	1,058
	0.7%	0.8%	0.8%
Native Hawaiian/ Other Pacific Islander	54	144	372
	0.4%	0.2%	0.3%
Some Other Race	1,729	13,256	20,058
	12.8%	17.2%	14.7%
Total Population	13,518	76,915	136,484

Source: 2010 U.S. Census Bureau
Note: Percentages may not add up to 100% due to rounding. Some entries are based upon reported data, while others are estimated.
"Hispanic" or "Latino" is not considered a race by the Census. Rather, it is a cultural/ethnic classification that overlaps with race. Persons who identified themselves as "Hispanic/Latino" also identified themselves with a race or combination of races.

Income

Table 2-5 summarizes information on the median income and the percentage of the population under the poverty line within the study area, Napa County, and the City of Napa. The 2007-2011 median household income in the study area was $50,104, lower than both Napa County and the City of Napa. Low-income populations in the affected area are identified with the annual statistical poverty thresholds from the Bureau of the Census Current Population Reports, Series P-60 on Income Poverty. In identifying low-income populations, Caltrans considered a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect.

Table 2-5 Household Income

Geographic Area	Median Household Income	% Population Below Poverty Level
Study Area[2]	$50,104	8.8%
Napa County	$68, 641	9.8%
City of Napa	$62, 642	11.2%
* Source: 2010 U.S. Census Bureau *Poverty guideline is $22,350 for a family of four (DHHS Guidelines: http://aspe.hhs.gov/poverty/11poverty.shtml)		

In the study area, 8.8 percent of the population lives below the poverty level, less than in the City of Napa, but more than in Napa County.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: As indicated in the Affected Environment Section, there is a minority community in the project study area, however it would not be impacted by the proposed project. This is because there are no substantial Noise (Section 2.2.7), Air Quality (Section 2.2.6), Traffic (Section 2.1.7) and Community (Section 2.1.3) impacts to any residents in this study area (For greater detail please refer to the sections listed above). Any noise effects would be temporary and would not impact any noise sensitive receptors. The impacts to air quality would be minimal and evenly dispersed throughout the project area and region. Transportation benefits of the proposed project would accrue equally to area residents. The project would improve the existing intersection and all work would take place in the existing Caltrans right of way.

Based on the above discussion and analysis, it is concluded, even though the project area is more diverse than either Napa County or the City of Napa, that the proposed project would not cause disproportionately high and adverse effects on any minority or low-income population areas pursuant to E.O. 12898.

No Build Alternative: Under the No Build Alternative, there would be no impacts to environmental justice populations.

[2] The study area data was gathered from US Census 2010

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: No avoidance, mitigation, and/or minimization measures are proposed.

***No Build Alternative*:** No avoidance, mitigation, and/or minimization measures are proposed.

2.1.6 UTILITIES/EMERGENCY SERVICES

Affected Environment

The following utilities have been identified as being present within the project footprint:

- American Canyon waterline
- Napa Water District waterline
- Underground gas main (Pacific Gas & Electric [PG&E])
- Overhead power lines (PG&E)
- Telephone Line (AT&T)
- Cable Line (Comcast)
- Sewer Line (Napa Sanitation District)

These utilities would be relocated as necessary to construct the proposed project. Caltrans would work with utility providers to restore utilities and services to pre-existing conditions or better after construction. All utility relocations would be within the environmental footprint of the proposed project. Although the exact locations for each utility would be determined during the design phase, Caltrans has included adequate buffer space within the environmental study area and identified resources and potential impacts that utility relocations may cause. Development of utility relocation plans during the design phase would ensure no interruption of local services. Since the project is within existing right-of-way, no changes in utility service would be attributable to the Soscol Junction Project.

Public Services and Facilities

The project would not affect provision of existing public services or measurably increase the need for new or physically altered government facilities in order to maintain acceptable service ratios, response times, and other performance objectives for any public service. Standard department management practices would preclude substantial adverse impacts during construction. A traffic management plan (TMP) would be completed prior to construction to address lane closures and traffic rerouting.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: CC-1: No impacts to Napa police, fire or emergency services, or the Napa County Sheriff services are anticipated. During construction, both lanes of traffic would be maintained to provide continual flow. The addition of the 'flyover' would alleviate traffic congestion and as result, emergency vehicles could improve their response time.

***No Build Alternative*:** No impacts would occur with the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: CC-1: Development of utility relocation plans during the design phase to ensure no interruption of local services.

***No Build Alternative*:** No avoidance, mitigation, and/or minimization measures are proposed.

2.1.7 TRAFFIC AND TRANSPORTATION/PEDESTRIAN AND BICYCLE FACILITIES

Regulatory Setting

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

In July 1999, the U.S. Department of Transportation (USDOT) issued an Accessibility Policy Statement pledging a fully accessible multimodal transportation system. Accessibility in federally-assisted programs is governed by the USDOT regulations (49 CFR Part 27) implementing Section 504 of the Rehabilitation Act (29 United States Code [USC] 794). FHWA has enacted regulations for the implementation of the 1990 Americans with Disabilities Act (ADA), including a commitment to build transportation facilities that provide equal access for all persons. These regulations require application of the ADA requirements to Federal-aid projects, including Transportation Enhancement Activities.

Affected Environment

The study area for traffic and transportation goes outside of the project limits to include upstream and downstream effects of the proposed project. The source for the information regarding traffic is from the Caltrans Office of Highway Operations. Project analysis was provided in the Caltrans Traffic Memorandum, *Soscol Junction Project; Years 2019 and 2039 Analysis of Impacts With Napa Pipe Development* (August 2013) and the addendum memo *Soscol Junction Flyover Project; Year 2035 Analysis of Impacts of Flyover Project and Geometric Options to Nearby*

Intersection With and Without Napa Pipe Development (October 2011). This study is available for review upon request.

For information regarding traffic impacts related to other local projects/developments, including but not limited to The Napa Pipe Project, refer to the Cumulative Impacts section.

SR 29 is a four- to five-lane conventional highway from Green Island Road to north of Soscol Ferry Road. It is a four-lane expressway from north of Soscol Ferry Road to south of its junction with SR 121. SR 29 is used as an interregional, recreational, commercial, agricultural, and commuter route. The posted highway speed limit within the proposed project area on SR 29 is 60 miles per an hour (mph).

SR 221 (the Napa-Vallejo Highway) is a four lane conventional highway from the intersection of SR 29 and Soscol Ferry Road to north of SR 121/Imola Avenue West. It is used by commuters to and from Vallejo, Fairfield and the San Francisco Bay Area, and by commercial traffic from SR 29 to central Napa. SR 221 is the main recreational SR from Highway 29 to Lake Berryessa. The posted highway speed is 55 mph on SR 221.

Transit

The VINE, the Napa Valley fixed-route bus system under the jurisdiction of the Napa County Transportation and Planning Agency (NCTPA), provides transit services along SR 29 and SR 221. The routes that are located within the project study area are SR 10 Calistoga/Vallejo, SR 20 Redwood Park & Ride/Napa Airport, and SR 29 VINE Express (see Figure 2-1).

Bicycle/Pedestrian Access

Beginning at SR 29/Soscol Ferry Road, SR 221 is a four-lane conventional divided highway with 6.9-ft. shoulders and continues north to SR 121 at Imola Avenue in the City of Napa. Within the project limits, SR 29 is a part of the Freeway and Expressway System with two lanes in each direction, except for the City of Napa where it turns into a six-lane freeway. Bicycle access is prohibited along SR 29

within the project study area. SR 221 serves as an alternative to SR 29 for motorists and bicyclists into the City of Napa. From the City of Napa, southbound access for bicyclists is along SR 221/ Kaiser Road connecting to Napa Valley Corporate Drive. This road crosses under SR 29, becoming Vista Point Drive and connects to Soscol Ferry Road, then continuing on Devlin Road to 29/221/12 at Airport Boulevard.

The Napa County Board of Supervisors adopted the NCTPA's Napa Countywide Bicycle Plan June 26, 2012, containing a 25-year vision for a set of interconnected local bicycle networks, made up of all types of bikeways. These include "Class I" multi-use paths, physically separated from roadways, "Class II" bike lanes, designated by striping on roads and "Class III" bike routes, which are roadways designated to be shared by bicycles and other vehicles (http://www.nctpa.net/nctpa-countywide-bike-plan-0).

With regard to SR 29, the Plan envisions a separate facility called the Napa Valley Vine Trail (see Figure 2-2). As proposed, it would be a contiguous 47-mile Class I trail spanning from the Vallejo Ferry Terminal in Solano County north through the cities of American Canyon, Napa, Yountville, St. Helena, and as far north as Calistoga. Approximately 29 miles of the Napa Vine Trail would parallel. A one-mile Class 1 facility has already been constructed in Yountville. A portion of the Napa Valley Vine Trail is proposed to run along Soscol Ferry Road and Devlin Road, adjacent to SR 12 and SR 29, through the proposed Soscol Junction Project area.

Regional Planning

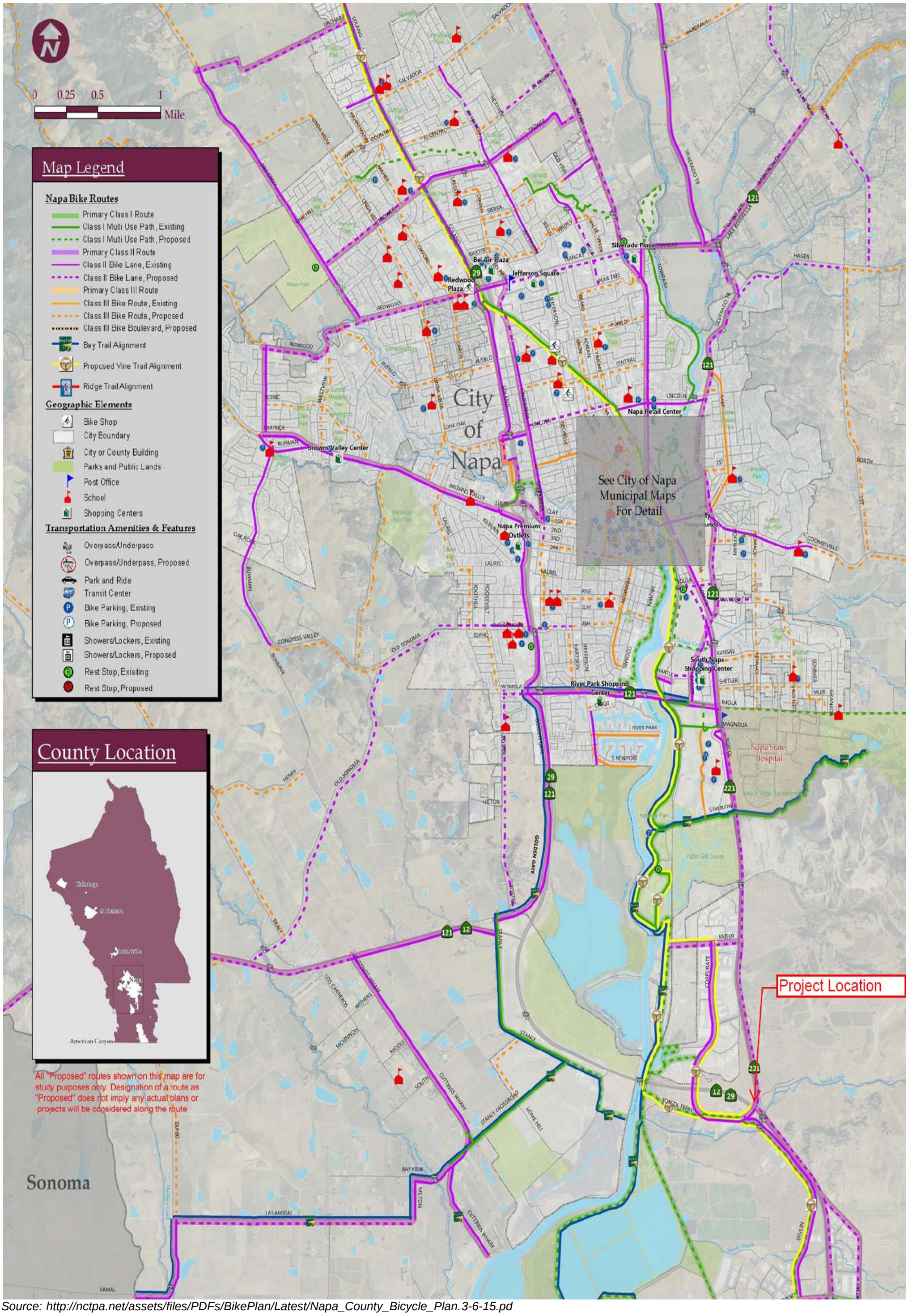
The San Francisco Bay Trail has requested a grant to construct a 0.8 mile segment of Bay, River and Vine Trail that would provide the only link between the cities of American Canyon and Napa. In addition, 1.6 miles of waterfront Bay, River, and Vine Trail are in the permitting phase at the Napa Pipe site directly adjacent to the north. Once constructed in approximately two to three years, this segment would connect to an existing Bay Trail at Kennedy Park and the Maxwell Bridge on Imola Drive resulting in six miles of contiguous Bay Trail from Soscol Ferry Road to Imola

Drive. The alignments of these proposed contiguous segments are along the Napa River under the southern terminus of the Butler Bridge, over a mile north of the Soscol Junction Intersection.

Figure 2-1 VINE Routes within Project Area

Source: http://nctpa.net/assets/files/PDFs/Schedules/Napa%20County%20and%20Napa%20City%20Map.pdf

Figure 2-2 Proposed Bike Routes



Source: http://nctpa.net/assets/files/PDFs/BikePlan/Latest/Napa_County_Bicycle_Plan.3-6-15.pd

Intersection Geometrics and Lane Configurations

The SB approach to the intersection from SR 221/Napa-Vallejo Highway consists of two left-turn lanes and a shared through/right-turn lane. On the NB approach from Soscol Ferry Road, the roadway consists of a left-turn lane and a shared through/right-turn lane. Both NB and SB SR 29 approaching the intersection consist of two through lanes and a left-turn lane. In addition, SB 29 has a deceleration/right-turn lane onto Soscol Ferry Road. Refer to Figure 1-5 and Figure 1-6 for a visual clarification.

Existing Peak Period Intersection Performance

Caltrans determined from data collected in February 2008 at the SR 221/29/Soscol Ferry Road Intersection that the AM peak period is from about 6:45AM to 8:45AM, and the PM peak period is from about 3:30PM to 6:00PM. Data and field observations indicate that, on the day the data was collected, the Soscol Junction intersection was operating at levels of service (LOS) F during the AM and PM peak periods. Traffic levels in the project vicinity have grown very slowly since 2008, therefore more recent traffic counts were not collected, see memo dated March 14, 2013 from Traffic Modeling and Forecasting; *Soscol Improvements Traffic Forecasts Effective Years.* The average delay per vehicle during AM and PM peak periods are 54 seconds and 151 seconds, respectively (Table 2-6).

Table 2-6 Existing Conditions at Soscol Junction

Intersection	Existing Conditions			
	AM Peak		PM Peak	
	Delay in seconds (sec)	LOS	Delay in sec	LOS
SR 29/221/Soscol Ferry Road (Soscol Junction)	54	D	151	F

Table 2-7 indicates the LOS of the studied intersections in the traffic network (see Figure 2-3) of the Soscol Junction Intersection, including the total combined seconds of delay during peak periods at the following intersections: SR 221(Napa Vallejo Highway)/Napa Corporate Drive, SR 221/Imola Avenue, SR 29 northbound (NB) ramps/Imola Avenue, SR 29 southbound (SB) ramps/Imola Avenue, SR 29/121(Sonoma-Napa Highway)/12, Airport Boulevard/Devlin Road, and SR 29/12 (Jameson Canyon Road). Levels of Service are defined in Figure 2-4.

Table 2-7 Existing Conditions of Nearby Intersections

Intersection	Existing Conditions			
	AM Peak		PM Peak	
	Delay in seconds (sec)	LOS	Delay in sec	LOS
SR 221/Napa Valley Corporate Drive	15	B	15	B
SR 221/Imola Avenue	36	D	70	E
SR 29 NB ramps/Imola Avenue	9	A	10	A
SR 29 SB ramps/Imola Avenue	13	B	13	B
SR 29/121/12	42	D	25	C
Airport Boulevard/Devlin Road	9	A	16	B
SR 29/12	55	D	132	F

Figure 2-3 Impacted Network Intersections

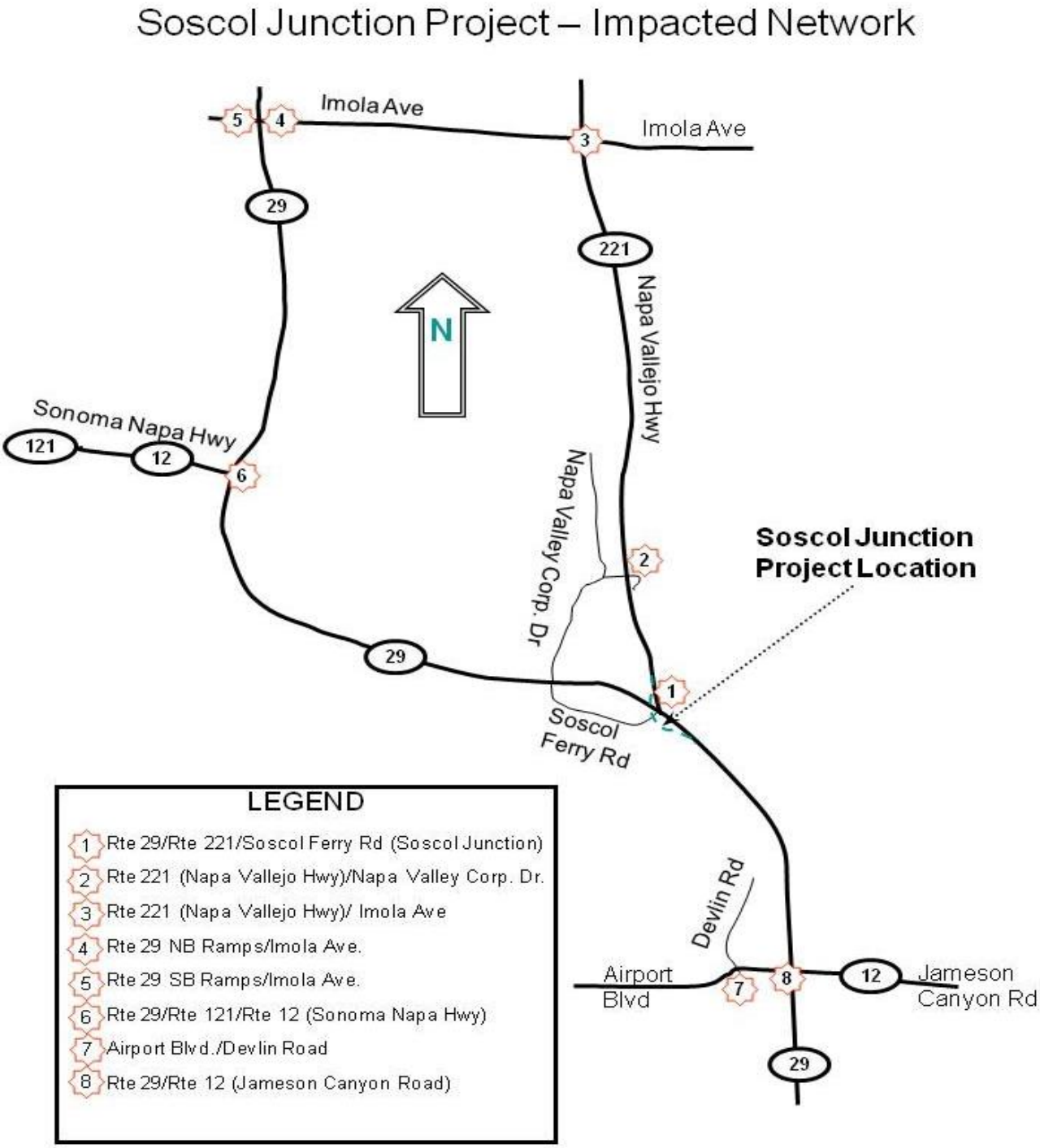
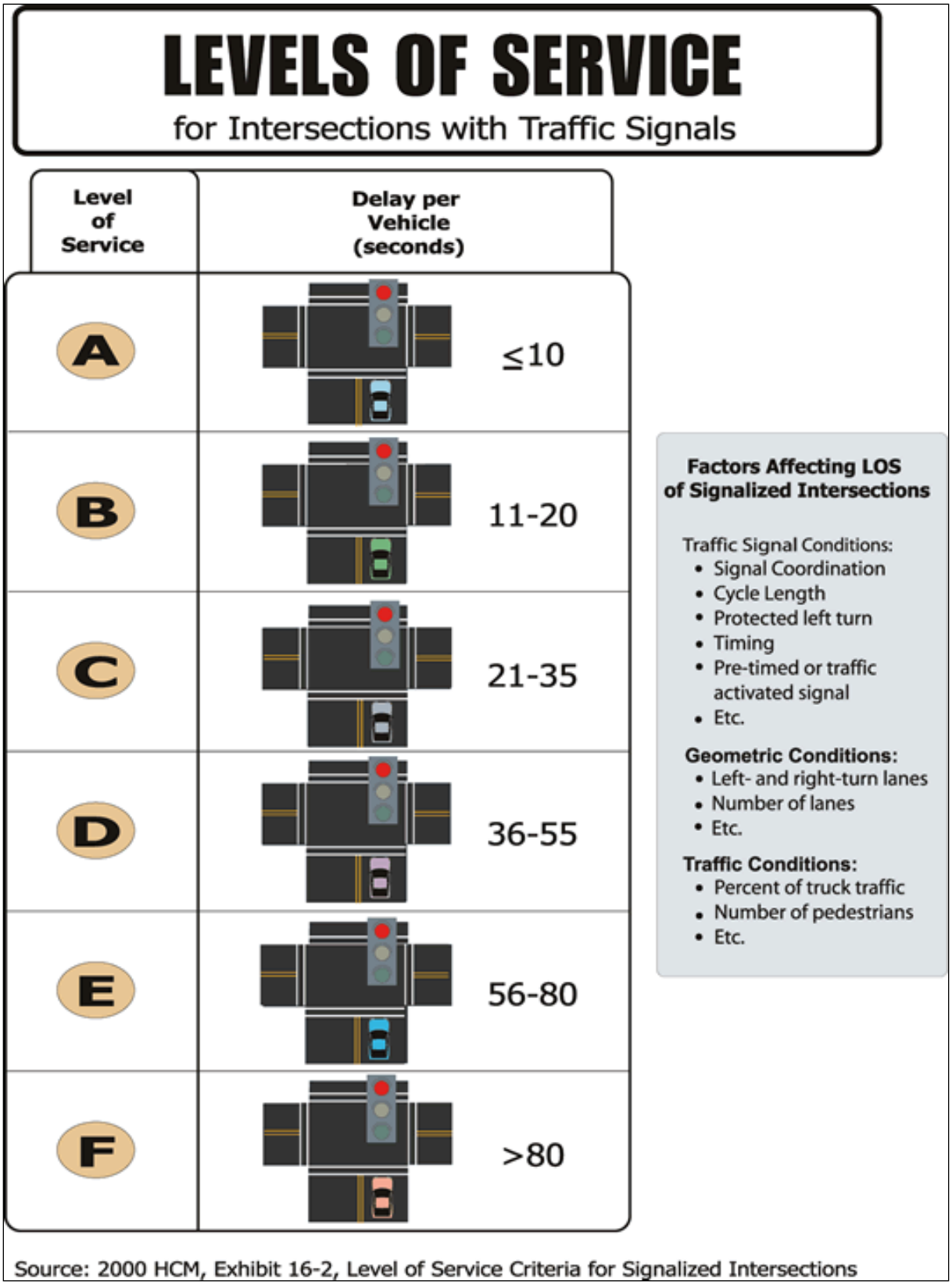


Figure 2-4 Levels of Service



Environmental Consequences

***Alternative 5, Option 1*:** Alternative 5, Option 1 would provide a flyover for the southbound SR 221 traffic to bypass the intersection of SB 29/SR 221 /Soscol Ferry Road (Soscol Junction) and directly connect to SB SR 29. The at-grade intersection would remain signalized. This would keep all turn movements the same as the existing, except for the two left-turn lanes from SB SR 221 to SB 29, which would now be on the flyover.

***Alternative 5, Option 2*:** Alternative 5, Option 2 would provide a flyover for the left-turn traffic to bypass the intersection of SB 29/SR 221 /Soscol Ferry Road and directly connect to SB SR 29. Under this alternative, the median on SR 29 at the intersection will be closed, which would eliminate all left-turn movements at the Soscol Junction intersection. Through movement to Soscol Ferry Road would be eliminated and the traffic signal would be removed. It will be replaced with a single-lane connector from SB SR 221 to NB SR 29. Only the right-turn movements to and from SR 29, SR 221, and Soscol Ferry Road would remain.

No Build Alternative: Under the No Build Alternative, the intersection geometrics and lane configurations would remain the same as the existing conditions.

2039 Future Peak Period Intersection Performance

Table 2-8 summarizes the projected 2039 peak period conditions and the level of service at the Soscol Junction Intersection and Table 2-9 summarizes the projected 2039 conditions within the project's traffic network (see Figure 2-3). Under the No Build Alternative, delays would be approximately 433 seconds in the AM and 395 seconds in the PM. If traffic growth occurs as forecasted, the existing Soscol Junction Intersection would experience more severe congestion and substantial vehicle delays during both the AM and PM peak periods. In addition, the Soscol Junction Intersection is expected to almost double in peak hour demand over the capacity that the intersection can currently accommodate during both AM and PM peak periods.

Table 2-8 2039 Soscol Junction Future Conditions

Intersection	2039 No Build				2039 Alternative 5, Option 1				2039 Alternative 5, Option 2			
	AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period	
	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS
SR 29/221/ Soscol Ferry Road (Soscol Junction)	433	F	395	F	348	F	296	F	2	A	19	B

Green indicates better LOS compared to No Build; Yellow, No Change; Red, Worse LOS

Table 2-9 2039 Soscol Junction Nearby Intersection Analysis

Intersection	2039 No Build				2039 Alternative 5, Option 1				2039 Alternative 5, Option 2			
	AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period	
	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS
SR 221/Napa Valley Corporate Drive	100	F	46	D	94	F	54	D	83	F	37	D
SR 221/Imola Avenue	63	E	168	F	68	E	175	F	69	E	176	F
SR 29 NB ramps/Imola Avenue	57	E	24	C	68	E	30	C	30	C	31	C
SR 29 SB ramps/Imola Avenue	13	B	26	C	13	B	27	C	13	B	43	D
SR 29/121/12	131	F	202	F	151	F	212	F	142	F	235	F
Airport Boulevard/ Devlin Road	14	B	13	B	14	B	13	B	11	B	13	B
SR 29/12[3]	130	F	279	F	136	F	284	F	148	F	303	F
Green indicates better LOS compared to No Build; Yellow, No Change; Red, Worse LOS												

[3] The analysis for the SR 29/12 intersection is shown with the assumption that the intersection is signalized, as it is presently. However, an Environmental Document has been approved for a future project (Jameson Canyon) at that intersection that would construct an interchange at this location. This would remove the signal and create a through movement, along SR 29. This project is currently on hold.

Under Alternative *5, Option 1 & Alternative 5, Option 2*, the proposed flyover would divert the heavy left-turn traffic movements from the SB SR 221 approach, thereby reducing delay and improving the Soscol Junction operations. Nearby intersections show improvements, no change, and worse conditions. The future conditions are described for each alternative below.

***Alternative 5, Option 1*:** Traffic from the two heavy left-turn lanes would divert to the flyover and reduce delay per vehicle at the Soscol Junction Intersection during the AM peak period by about 85 seconds, and during the PM peak period by about 99 seconds compared to the No Build alternative. Although this alternative improves the intersection operations versus the No Build Alternative, the Soscol Junction intersection would operate at LOS F during both the AM and PM peak periods. In addition, delays in year 2039 would be longer in duration during both the AM and PM Peak Periods in comparison to the existing 2008 conditions shown on Table 2-6 due to projected increased demand.

Alternative 5, Option 1 would have similar delays and LOS as the No Build Alternative at every nearby intersection analyzed in Table 2-9. Also, similar to the No Build Alternative nearby intersections will have greater delays than the existing conditions shown in Table 2-7. Along with increased demand, delays are partly attributable to reduced delays at Soscol Junction intersection, which would allow traffic to reach nearby intersections more quickly than under No Build conditions. This effect is notable during the PM Peak at SR 221/Napa Valley Corporate Drive and SR 29 SB ramps/Imola Avenue intersections where, compared to the No Build, delay would increase from 46 to 54 seconds and from 26 seconds to 27 seconds, respectively. It is also notable in the AM and PM Peak periods at the SR 221/Imola Avenue, SR 29 NB ramps/Imola Avenue, SR 29/121/12, and SR 29/12 intersections. Among these intersections the greatest increase in delay would occur at SR 29/121/12, but would not exceed 20 seconds during the AM Peak.

Nearby intersections would have similar delays as the No Build Alternative; However, Option 1 would have an overall beneficial impact on traffic operations.

Alternative 5, Option 2: In addition to the separate left-turn movement on the flyover structure, the existing traffic signal at the Soscol Junction would be removed and the median along SR 29 would be closed. Under this alternative, the median on SR 29 at the intersection will be closed, which would eliminate all left-turn movements at the Soscol Junction intersection. From Soscol Ferry Road, those wishing to go onto NB SR 29 would take NB SR 221/Napa Valley Corporate Drive and the connector at Soscol Junction providing a free right/merging lane onto NB SR 29 (refer to Figure 2-5 below). The same movement would apply to those wishing to go onto SR 121.

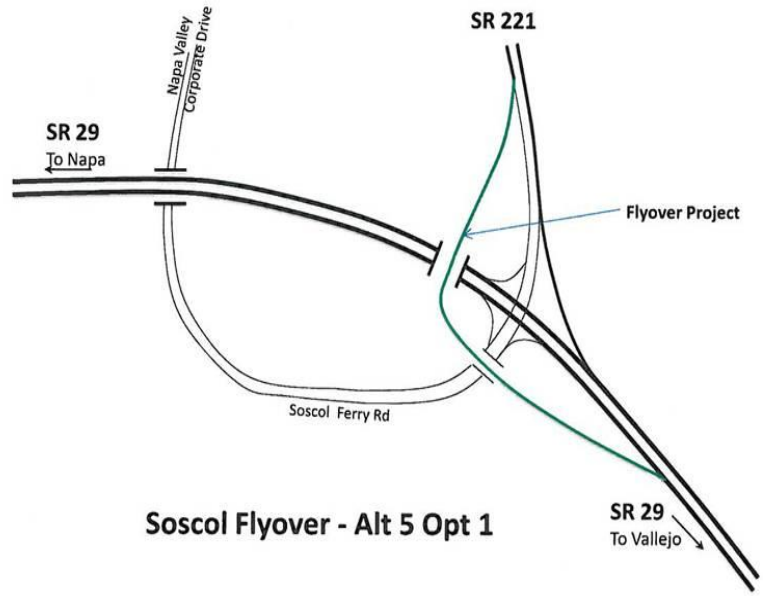
As shown in Table 2-8, this alternative would reduce vehicle delays at Soscol Junction intersection during the AM peak period by about 431 seconds, and during the PM peak period by about 376 seconds compared to the No Build Alternative. By providing free right-turn and free-flowing through movements on SR 29, vehicle delays would diminish, such that the Soscol Junction intersection would operate at LOS A and B during the AM and PM peak periods, respectively. Under Alternative 5, Option 2, the Soscol Junction intersection in 2039 would experience less delay than compared to Alternative 5, Option 1, the No Build Alternative, or existing 2008 conditions.

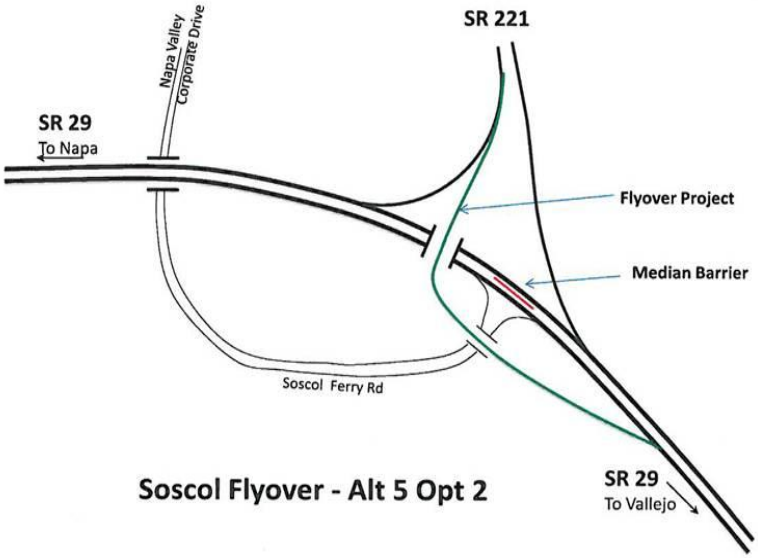
Under this alternative, the SR 29/NB ramps/Imola Avenue would have improved LOS in the AM Peak Period and SR 29 SB ramps/Imola Avenue intersection would have decreased LOS in the PM Peak Period compared to the No Build Alternative as shown on Table 2-9. These changes are highlighted in green and red in Table 2-9. Alternative 5, Option 2 would have similar delays and LOS compared to the No Build Alternative for the other six nearby intersections in the AM and PM Peak Periods. Also, similar to the No Build Alternative nearby intersections would have greater delays than the existing conditions shown on Table 2-7. While, reductions in delay at Soscol Junction would allow more traffic to reach nearby intersections more quickly, additional delay would not exceed 24 seconds over No Build conditions during the PM Peak period at the SR 29/12 intersection.

Similar to Option 1, nearby intersections would have similar delays as the No Build Alternative; however, Option 2 would have an overall beneficial impact on traffic operations.

No Build Alternative: Under the No Build Alternative, existing delays and intersection operations would continue to worsen into the future. As shown in Tables 2-6 and 2-8, the increased demand at the Soscol Junction intersection increases the AM peak delay by 369 seconds, and the PM peak delay by 285 seconds between the existing conditions and the forecast 2039 conditions.

Figure 2-5: Schematics of Soscol Junction Project Build Alternatives





Similar to the Soscol Junction Interchange, as shown in Tables 2-7 and 2-8, the majority of nearby intersection would experience increased delays and degraded LOS from the existing condition under the No Build Alternative due to increased demand projected up to 2039. For instance, SR 221/Napa Valley Corporate Drive which currently operates at LOS B with 15 seconds of delay in both the AM and PM peak periods would operate at LOS F in 2039 with 100 seconds and 46 seconds of delay in the AM and PM peak, respectively, under No Build Conditions. This general pattern of degradation under future conditions compared to the existing is seen at the other intersections as well. The SR 29/12 intersection with LOS F in the PM Peak under existing conditions would not improve under the future No Build conditions. In conclusion, the No Build Alternative would not meet the purpose and need of the project under future traffic conditions.

Transit

The proposed project would have a positive impact on transit in the long-term by reducing travel times for traffic going through the Soscol Junction Intersection. In the short term, however, construction activities may result in detours that could increase travel times and make transit schedules less reliable. This effect would be short-term and temporary and would be addressed in the Construction Traffic Management Plan (TMP) that would be developed prior to construction.

Bicycle/Pedestrian

A portion of the Napa Valley Vine Trail, which is a separate facility that is proposed to run parallel with Soscol Ferry Road and Devlin Road, adjacent to SR 12 and SR 29, through the proposed Soscol Junction Project area will not be affected by the Build Alternatives.

Under either Build Alternative, bicycle access will continue to be prohibited along SR 29 within the project study area. SR 221 serves as an alternative to SR 29 for motorists and bicyclists into the City of Napa. From the City of Napa, southbound access for bicyclists is along SR 221/ Kaiser Road connecting to Napa Valley Corporate Drive. This road crosses under SR 29, becoming Vista Point Drive and

connects to Soscol Ferry Road, then continuing on Devlin Road to 29/221/12 at Airport Boulevard.

Construction

The existing number of lanes would be maintained during peak hours of construction so that motorists and bicyclists would not be detoured. During nighttime work, lane closures can be expected. Flaggers and message signs may be used to warn travelers of any potential delays or anticipated closures.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: No mitigation would be required under either build alternatives, as long-term impacts of the project on transportation and vehicular traffic would be beneficial, considering the reductions in traffic delay at the Soscol Junction Intersection.

T-1: *Traffic Management Plan (TMP).* Caltrans would develop a TMP to safeguard work-zone safety, minimize mobility impacts, and provide up-to-date information to the public during roadway stage construction.

The TMP for the proposed project would be developed after project approval, during the final design phases, and would be supported by detailed traffic studies to evaluate traffic operations. The need for necessary lane closures during off-peak hours or at night, or short-term detour routes, would be identified as required. The TMP may include press releases to notify and inform motorists, businesses, community groups, local entities, emergency services, and elected officials of upcoming closures or detours. Various TMP elements, such as portable Changeable Message Signs (CMS), or other Intelligent Transportation System (ITS) measures, and Construction Zone Enhances Enforcement Program (COZEEP) may be utilized to alleviate and minimize delay to the traveling public. For safety purposes, temporary railing would be provided throughout the project limits during construction.

No Build Alternative: No avoidance, minimization and/or mitigation measures are proposed under the No Build Alternative.

2.1.8 VISUAL/AESTHETICS

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 as amended establishes that the federal government use all practicable means to ensure all Americans safe, healthful, productive, and *aesthetically* (emphasis added) and culturally pleasing surroundings (42 United States Code [USC] 4331[b][2]). To further emphasize this point, the Federal Highway Administration (FHWA) in its implementation of NEPA (23 USC 109[h]) directs that final decisions on projects are to be made in the best overall public interest taking into account adverse environmental impacts, including among others, the destruction or disruption of aesthetic values.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of *aesthetic*, natural, scenic and historic environmental qualities" (CA Public Resources Code [PRC] Section 21001[b]).

Affected Environment

The following section describes and illustrates the visual impacts of the proposed project. It compares existing visual conditions with anticipated visual conditions. Option 1 and 2 would have the same visual impacts. Option 2 would include a new connector ramp from SB 221 to NB 29 that would be depressed below the surrounding grade, and therefore unobtrusive. The physical differences between the two options are not sufficient to yield different visual impacts. Alternative 5, Option 1 and Alternative 5, Option 2 are discussed further below.

The affected environment for visual/aesthetics is represented by the project setting, also known as the project corridor, which is defined as the area of land that is visible from, adjacent to, and outside the highway right-of-way, and is determined by topography, vegetation, and viewing distance.

The Project is located in Napa County on SR 29 from 0.3 miles south of North Kelly Road to Napa Corporate Way Undercrossing and on Route 221 from the intersection of SR 29 to Napa Valley Corporate Way/Anderson Road. The proposed project limits along SR 29 extend from North Kelly Road (PM 5.0) to the SR 221/Soscol Ferry Road intersection (PM 6.2), and along SR 221 from the existing SR 29/Soscol Ferry Road intersection (PM 0.0) to the Anderson Road intersection (PM 0.6).

Figure 2-6A Southern View from Grape Crusher Vista Point

Broad views of the region occur from the two state highways. Scenes include rolling, grass-covered hillsides dotted with native oak trees, vineyards, and the Napa River valley with its mix of industrial, agricultural, and commercial land uses. Near the project site, light industrial development occurs west of SR 29 along Devlin Road and along Napa Valley Corporate Drive. Views in this area include the two state highways, highway traffic, overhead utilities, overhead sign structures, local roads, buildings and other development, grass-covered hills, and groups of trees. The area is considered to have a moderate, not high, level visual quality due to the presence of unrelated man-made elements as well as natural-appearing features. Distant views of Milliken Peak and Arrowhead Mountain to the west, Mount George to the northeast, and Elkhorn Peak to the southeast occur. Trees in the vicinity of the proposed project are mostly sparse except near Soscol Creek, where vegetation is dense along the channel. Otherwise, a group of trees occurs on the west side and in the median of SR 221 approximately one-quarter mile north of the intersection with SR 29.

A roadside vista point is located off of Napa Valley Corporate Drive, north of SR 29 and west of SR 221. It features a statue over 15 feet tall of a man crushing grapes, symbolic of the region. The statue, located at the top of a knoll, is visible from SR

29. From the vista point, the Napa Valley Corporate Business Park and adjacent resort hotels are seen to the north.

In addition to the existing surface highways, the state highway system in vicinity of the project includes the SR 29 George F. Butler Bridge over the Napa River. The bridge is less than 1 mile from the proposed new flyover. The bridge is an arching concrete structure supported on columns. It rises high as it spans the river to allow watercraft to freely pass underneath.

Figure 2-6B George F. Butler Bridge

A Scenic Resource Evaluation of the project area found no features that may be considered Scenic Resources. SR 29 from SR 221 southward to SR 37 and all of SR 221 are eligible for inclusion in the State Scenic Highway System. To date, the county has not implemented a scenic resource protection plan or submitted a scenic resource study to the State for consideration of official designation of scenic highway status.

Viewers potentially affected by project-related changes include the following groups:

- Motorists traveling on the two state highways including tourists visiting the wine-country (Highway Users)
- Persons engaged in business or commercial activities within the project area including patrons of the restaurant adjacent to the intersection of Soscol Ferry Road and SR 29 (Highway Neighbors)
- Residents along Soscol Creek Road east of the project site and Soscol Ferry Road and Devlin Road west of the site (Highway Neighbors)
- Persons visiting the Vista Point north of SR 29 (Highway Neighbors)

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. *Resource change* is assessed by evaluating the visual character and the visual quality of the visual resources that comprise the project corridor before and after the construction of the proposed project.

Visual resources of the project setting are defined and identified below by assessing visual character and visual quality in the project corridor.

Visual character includes attributes such as form, line, color, texture, and is used to describe, not evaluate; that is these attributes are neither considered good nor bad. However, a change in visual character can be evaluated when it is compared with the viewer response to that change. Changes in visual character can be identified by how visually compatible a proposed project would be with the existing condition by using visual character attributes as an indicator.

The visual character of the proposed project will be compatible with the existing visual character of the corridor. A prime visual feature of the corridor is the highway facility itself. The line, form and color of the flyover would be similar to the nearby existing bridge. The proposed flyover would be a curving, linear, horizontal form rising up and over SR 29 and then merging with SR 29. The proposed project would have little effect on the visual character of the area.

Visual quality is evaluated by identifying the vividness, intactness, and unity present in the project corridor. Public attitudes validate the assessed level of quality and predict how changes to the project corridor affect visual quality. This process helps identify specific methods for addressing each visual impact that may occur as a result of the project. The three criteria for evaluating visual quality are defined below:

> **Vividness** is the extent to which the landscape is memorable and is associated with distinctive, contrasting, and diverse visual elements.

Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.

Unity is the extent to which all visual elements combine to form a coherent, harmonious visual pattern.

The population affected by the project is composed of *viewers*. Viewers are people whose views of the landscape may be altered by the proposed project—either because the landscape itself has changed or their perception of the landscape has changed.

The response that viewers have to changes in their visual environment is one of two variables that determine the extent of visual impacts that would be caused by the construction and operation of the proposed project. The other variable is the change in visual resources.

Viewer response is a measure or prediction of the viewer's reaction to changes in the visual environment and has two dimensions as previously mentioned, viewer exposure and viewer sensitivity.

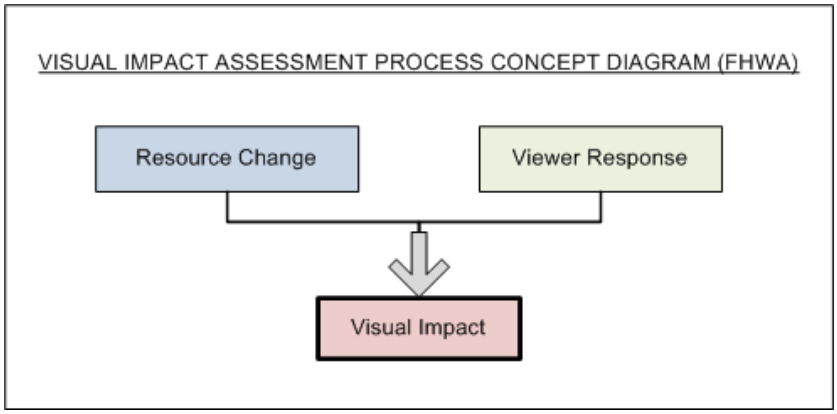
Viewer exposure is a measure of the viewer's ability to see a particular object. Viewer exposure has three attributes: location, quantity, and duration. *Location* relates to the position of the viewer in relationship to the object being viewed. The closer the viewer is to the object, the more exposure. *Quantity* refers to how many people see the object. The more people who can see an object or the greater frequency an object is seen, the more exposure the object has to viewers. *Duration* refers to how long a viewer is able to keep an object in view. The longer an object can be kept in view, the more exposure. High viewer exposure helps predict that viewers will have a response to a visual change.

Viewer sensitivity is a measure of the viewer's recognition of a particular object. It has three attributes: activity, awareness, and local values. *Activity* relates to the preoccupation of viewers—are they preoccupied, thinking of something else, or are they truly engaged in observing their surroundings. The more they are actually

observing their surroundings, the more sensitivity viewers will have of changes to visual resources. *Awareness* relates to the focus of view—the focus can be wide and general, or narrow and specific. The more specific the awareness, the more sensitive a viewer is to change. *Local values* and attitudes also affect viewer sensitivity. If the viewer group values aesthetics in general or if a specific visual resource has been protected by local, state, or national designation, it is likely that viewers will be more sensitive to visible changes. High viewer sensitivity helps predict that viewers will have a high concern for any visual change.

Visual impacts are determined by assessing changes to the visual resources and predicting viewer response to those changes. These impacts can be beneficial or detrimental. Temporary impacts due to the contractor's operations are also considered. A generalized visual impact assessment process is illustrated in the following diagram:

Figure 2-7 Visual Impact Assessment Process Concept Diagram



The figure below provides a reference for determining levels of visual impact by combining resource change and viewer response.

Figure 2-8 Visual Impact Ratings

Visual Impact Ratings Using Viewer Response and Resource Change						
		Viewer Response (VR)				
Resource Change (RC)		Low (L)	Moderate-Low (ML)	Moderate (M)	Moderate-High (MH)	High b(H)
	Low (L)	L	ML	ML	M	M
	Moderate-Low (ML)	ML	ML	M	M	MH
	Moderate (M)	ML	M	M	MH	MH
	Moderate-High (MH)	M	M	MH	MH	H
	High (H)	M	MH	MH	H	H

Environmental Consequences

Alternative 5, Option 1 and Option 2: Permanent changes to the existing visual environment at the project site (the intersection of SR 29 and SR 221) would result from the visual presence of the proposed structural flyover and related elements of the project. Related elements include concrete columns and earth embankments to support the elevated lanes of the flyover, concrete retaining walls to contain the earth embankments, and additional pavement surfaces (AV-1). Trees within the permanent footprint of the project would need to be removed (AV-3). Changes would be seen primarily from three places: the state highways, Devlin Road at Soscol Ferry Road just west of SR 29, and the highest point within the Grape Crusher Vista Point north of SR 29. Soscol Creek Road becomes a private road and is not considered a primary public viewing location. Photo simulations that depict how the project would appear from these three locations have been prepared and are included on pages that follow.

The majority of people would see the project as motorists on SR 29, at very close range as they approach and pass the flyover. Far fewer people would see it from

Soscol Creek Road and Soscol Ferry Road at places near SR 29 including the Soscol House and up to six private residences in the immediate area. In both cases the new flyover with its support columns, retaining walls, and approach embankments would be a dominant feature (AV-2).

From the northbound lanes of SR 29 (Key View 3, Figures 2-12A and 2-12B), the flyover would appear as motorists approach the structure. As they draw closer the flyover would begin to hinder views of distant hills to the north including Milliken Peak and Arrowhead Mountain. The flyover would not negatively impact motorists' views of the Grape Crusher statue since the statue does not become fully visible until just beyond the location of the proposed flyover. The flyover would minimally affect views of the surrounding area for southbound motorists because persons would be approximately at the same elevation as the flyover or higher as they approach the structure.

From the vicinity of the Soscol House (Key View 2, Figures 2-11A, 2-11B, and 2-11C), the flyover would be about 400 feet away and in full view. As discussed in the section on Cultural Resources and Appendix K, the proposed project would not directly impact the Soscol House property through permanent physical occupancy or temporary occupancy. The project would also not result in indirect effects through alterations in visual or cultural setting of the property. The elevated roadway, support columns, and touchdown embankments would replace the existing at-grade signalized intersection. The existing view toward the highway is open and extends to a distant ridge that forms the skyline. The proposed new structure would partially obstruct views to the east side of SR 29 that feature grass-covered hillsides and groups of trees. Patrons of businesses along Devlin Road south of Soscol Ferry Road would have more distant views of the flyover that would be partially screened by trees along Suscol Creek.

The flyover would be about 0.4 miles southeast of the Grape Crusher Vista Point. The vista point entrance road and parking lot are on the north side of the facility.

The flyover would not be in view from these areas. The statue of the grape crusher stands on the highest ground within the facility, east of and above the parking lot. Persons who walk up a path about 450 feet long from the parking lot to the base of the statue would have the opportunity to look south (away from the statue) and view the flyover. Seen at this distance, the flyover would not impact scenic panoramas but would be a new feature added to the scene (Key View 1, Figures 2-10A, 2-10B, and 2-10C). The flyover would be in the same location as the existing highway intersection, and would occupy only a portion of any panoramic view.

Implementation of the project would require the removal of trees (AV-3). It is estimated that as many as 76 trees could be affected by either trimming or removal. Those to be removed would be identified once final construction plans are prepared. Of the trees that could be affected by the project, sixteen have a diameter at breast height (dbh) of between 20 and 46+ inches. They are considered large. The other 60 potentially affected trees all have a dbh of between 3 and 20 inches; 49 have a DBH of 15 inches or less. All potentially affected trees occur on the west side of the highway, most near or along Suscol Creek west of SR 29. While trees at this location would be removed or trimmed, numerous trees in the same area would be unaffected making removals less conspicuous. Areas where tree impacts would occur are primarily within the view of highway motorists, motorists on local roads, the Soscol House, and the few private residences in this same area. Impacts to trees would not be readily apparent from the Grape Crusher vista point. Over time, the vegetative cover patterns of areas disturbed during project construction would essentially match the adjacent, undisturbed areas due to re-establishment of vegetation.

Visual quality within the highway corridor will not be substantially altered by the proposed project under Option 1 or 2. The George F. Butler Bridge is a memorable highway feature. The proposed flyover would be similar in character. The landscape appears moderately intact since development is relatively sparse and secondary to the natural features of the area. The light industrial land uses seen along and near the highway are an exception. The degree of unity in the landscape is moderate.

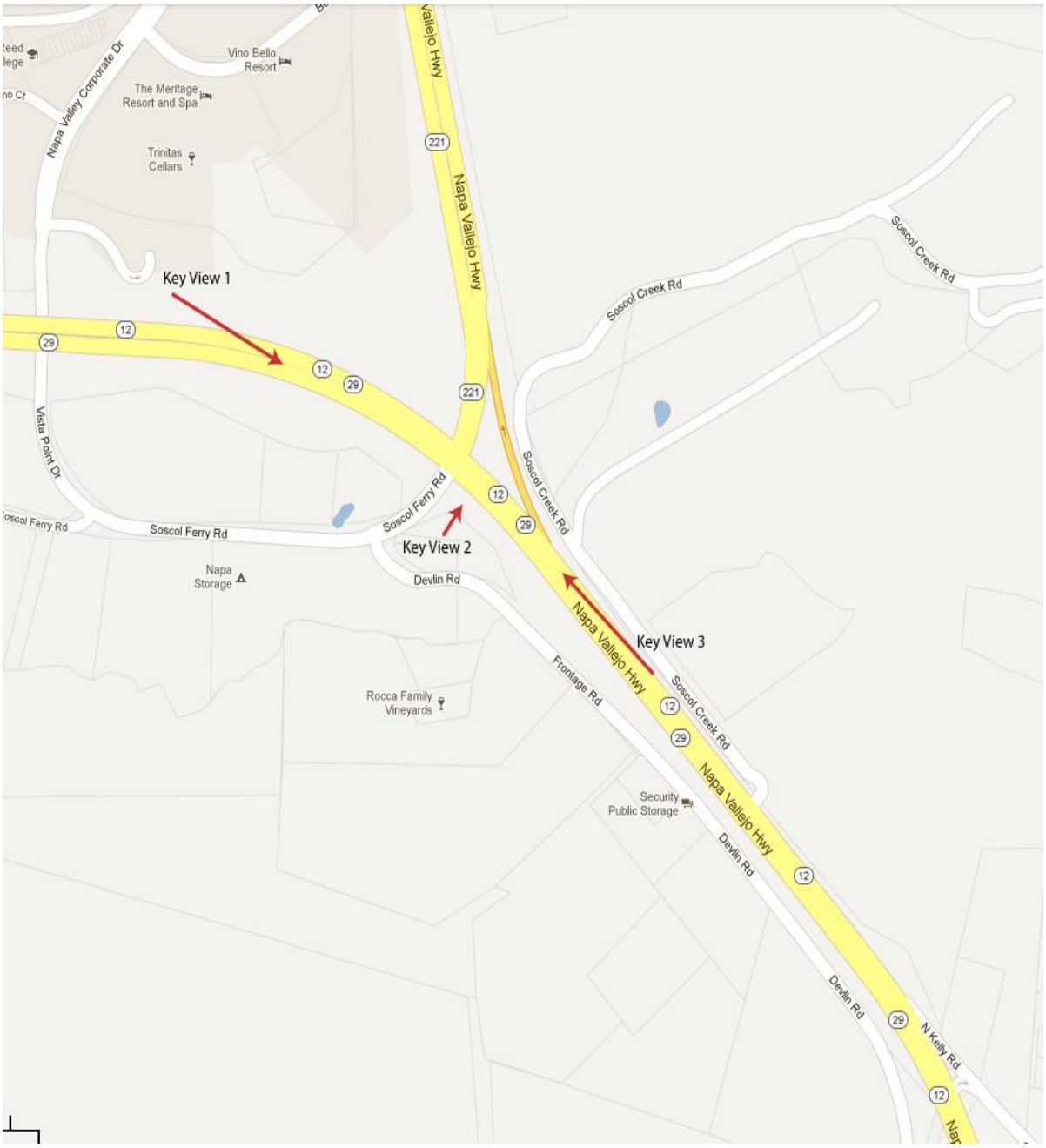
Primary elements of the overall landscape appear fairly distinct and provide a recognizable but not clearly harmonious visual pattern. The proposed project would have little effect on the visual quality of the area.

The proposed flyover and associated ramps are in a largely rural area where the convergence of two state routes occurs. The overall viewer exposure for Highway Neighbors would be moderate. Highway Neighbors are located nearby the flyover; however they are few in number but would have relatively long duration views of the project since their position is mostly stationary. Viewer exposure for Highway Users would be low to moderate. They would see the new flyover close up as they approach and pass it, their numbers would be high, but the duration of their view of the new facility would be brief.

The activities engaged in by Highway Neighbors varies but in any case do not involve the nearby state highway system. Their awareness of the highway, including the new flyover, would likely be low since their attention would be directed toward specific activities. The value of landscape aesthetics to Highway Neighbors can be considered low to moderate in this case.

Because it is not feasible to analyze every view in which the proposed project would be seen, it is necessary to select a number of key views associated with visual assessment units that would most clearly demonstrate the change in the project's visual resources. Key views also represent the viewer groups that have the highest potential to be affected by the project considering exposure and sensitivity.

Figure 2-9 Key Views (All)



KEY VIEW 1 – Southern View from Grape Crusher Vista Point

Views in all directions occur from this location. The view to the southeast in the direction of the existing SR 29 and SR 221 intersection and the proposed project is comprised of expansive grasslands, rolling hillsides with masses of oak trees, vineyards, and large hills in the distance. State highway facilities occupy a small portion of the scene. The visual character of the scene is mostly rural and visual quality is moderate-high.

Figure 2-10A Key View 1- Existing Conditions

Figure 2-10B Key View- Alternative 5, Option 1 Simulated Future Conditions

Figure 2-10C Key View- Alternative 5, Option 2 Simulated Future Conditions

Viewer Response

Viewers would be approximately one-third of a mile from the proposed project. Viewer exposure to the project would be no greater than moderate because views in all directions are possible at this location and in fact would likely be oriented away from the project as people view the monument of the Grape Crusher. The area serves as a public vista point which suggests viewer sensitivity would be high yet the facility is not accessible from SR 29 and relatively few people stop there. The overall viewer response in this case would be moderate.

Resource Change

The proposed project would cause a recognizable change in Key View 1 through the addition of the proposed flyover and earth embankment approach ramp on the north end (left end of the flyover structure in the simulated image). The lines and color of project features would be consistent with the existing setting. The form of the new flyover would be similar to the existing bridge on SR 29 over the Napa River. The effect on visual character would be low. The degree of vividness would increase with the addition of the flyover. Intactness and unity would remain the same. The effect on visual quality would be low. The overall level of resource change would be low.

KEY VIEW 2 – From the Villa Romano Restaurant at the historic Soscol House building west of the intersection of SR 29 and SR 221 looking northeast.

Figure 2-11A Key View 2 –Existing Conditions

Views in all directions occur from this location. The view to the northeast in the direction of the existing SR 29 and SR 221 intersection and the proposed project includes restaurant parking, a lawn area, numerous light standards, highway directional signs, a commercial sign, overhead utilities, traffic signals, and some low hills beyond the highway that are seen against the sky. The road surface of SR 29 and SR 221 is minimally visible since the topography is flat but traffic on the highway is in full view. The visual character of the scene is mostly rural and visual quality is moderate-low.

Figure 2-11B Key View 2 – Alternative 5, Option 1 Simulated Future Conditions

Figure 2-11C Key View 2 – Alternative 5, Option 2 Simulated Future Conditions

Viewer Response

Viewers at this location would be approximately 500 feet from the proposed project. Viewer exposure to the project would be moderate since views in all directions are possible and would likely be oriented toward the historic Soscol House, not toward the highway. As restaurant patrons, persons at this location would likely be aware of the surrounding landscape. Viewer sensitivity would be moderate. The overall viewer response in this case would be moderate.

Resource Change

The proposed flyover would block the distant hills from view. The top edge of the flyover and traffic on the flyover would be seen against the sky as depicted in the simulated image above. The lines of new project features would be consistent with the existing setting. The form and color of the new flyover would be similar to the existing bridge on SR 29 over the Napa River, but in this scene the flyover would be large, prominent feature. The effect on visual character would be moderate. Loss of the view of the hills would decrease the vividness of the scene. The addition of the flyover would decrease the intactness of the scene. Unity would remain the same. The effect on visual quality would be moderate. The overall level of resource change would be moderate.

KEY VIEW 3 – From northbound SR 29 as motorists approach the intersection of SR 29 and SR 221 looking northwest.

Figure 2-12A NB SR 29 - Existing Conditions

When heading north on SR 29 views from this location are primarily oriented north-northwest in the direction of travel. The view is toward the existing SR 29 and SR 221 intersection and looks directly at the proposed project. SR 29 is the primary component of the scene and includes the northbound and SB travel lanes (and traffic) and various highway signs. The grassy roadside, clumps of trees, and an overhead power line are evident at the right edge of the scene. Forested hills form the skyline in the distance but are partially obscured by overhead directional signs. The visual character of the scene is mostly rural and visual quality is moderate.

Figure 2-12B – Alternative 5, Options 1 and 2 Simulated Future Conditions

Viewer Response

Viewers (motorists) at this location would be within 500 to 1,000 feet from the proposed project and would continue to get closer until they pass beneath the proposed flyover. Viewers would be in close proximity to the project but the duration of the view would be brief. As a result, viewer exposure would be moderate. Because many different people drive through the project area and do so for different reasons, highway motorists have an overall moderate sensitivity to the visual environment. The overall viewer response in this case would be moderate.

Resource Change

The proposed flyover would appear as a dominant element of the scene in Key View 3. The new structure would mostly block the distant hills from the particular view at this location which represents the worst case condition. Less or none at all would be blocked when motorists are farther from the flyover. In Key View 3, the top edge of

the flyover and traffic on the flyover would be seen against the sky as depicted in the simulated image above. The lines of new project features would be consistent with the existing setting and the form and color of the new flyover would be similar to the existing bridge on SR 29 over the Napa River. Therefore, the effect on visual character of the highway corridor would be low. Loss of the view of the hills for northbound motorists would briefly decrease the vividness of the scene. The addition of the flyover would decrease the intactness of the scene. Unity would remain the same. The effect on visual quality of the highway corridor would be moderate. The overall level of resource change would be moderate-low.

The visual impact assessment found that the proposed project would have a Moderate-Low impact in Key View 1 and a Moderate impact in Key Views 2 and 3. Key Views 1 and 2 represent views from areas near the highway but not on it. These are considered Highway Neighbors. It should be noted very few viewers (Highway Neighbors) have access to Key Views 1 and 2 compared to the number of Highway Users that experience Key View 3.

It is anticipated that the project would take approximately two years to construct. Visual impacts due to the presence of construction equipment, materials, personnel, and activities as listed below would occur (AV-4). Areas in the project vicinity within the State right of way would potentially be used for turnouts, haul roads, borrow, disposal, and stockpiling (AV-1). Local streets including Napa Valley Corporate Way and Napa Valley Corporate Drive may be used for traffic detours for certain periods during construction of the flyover. An additional temporary detour route would be constructed and removed upon completion of the project. Falsework would be required to span Suscol Creek and SR 29 during construction of the flyover superstructure.

***No Build Alternative*:** There would be no change to the existing visual/aesthetic environment under the No Build Alternative. Consequently the No Build Alternative would not result in new adverse visual impacts.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: : AV-1 – AV-4: To minimize the degree of visual change of the proposed project, Caltrans Office of Landscape Architecture recommends the following measures be included as part of the project:

(AV-1) Cut and fill slopes should be contour graded to match the contours of adjacent, undisturbed topography to the extent feasible. Exposed ground surfaces should be hydro seeded with erosion control grasses and replanted with appropriate native tree and shrub species so as to match adjacent, undisturbed vegetation.

(AV-2) Retaining walls and flyover structures should be given a pattern, texture and/or color to minimize contrast with the existing setting and to reduce the potential for graffiti.

(AV-3) The existing trees near SB 121 that require removal for construction of the new connector ramp as part of Alternative 5, Option 2 should be replaced within the limits of the project. Oak and other native trees would be replaced at a ratio of 3:1. Non-native trees should be replaced at a 1:1 ratio.

(AV-4) During the period of construction, material and equipment should be screened to minimize visual exposure from roadways, the vista point, and the Soscol House. Staging areas for equipment and materials should be kept free of debris and clutter. Areas adjacent to work sites should be protected from contractor's operations. Lighting for night work should be placed and adjusted such that light is cast downward and confined to the immediate work area. Lights should be shielded to prevent stray light.

***No Build Alternative*:** No avoidance, minimization, and/or mitigation measures are proposed.

2.1.9 CULTURAL RESOURCES

Regulatory Setting

The term "cultural resources" as used in this document refers to all "built environment" resources (structures, bridges, railroads, water conveyance systems, etc.), culturally important resources, and archaeological resources (both prehistoric and historic), regardless of significance. Laws and regulations dealing with cultural resources include:

The National Historic Preservation Act (NHPA) of 1966, as amended, sets forth national policy and procedures for 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 effects of their undertakings on such properties and to allow the Advisory Council on Historic Preservation the opportunity to comment on those undertakings, following regulations issued by the Advisory Council on Historic Preservation (36 Code of Federal Regulations [CFR] 800). On January 1, 2004, a Section 106 Programmatic Agreement (PA) between the Advisory Council, the Federal Highway Administration (FHWA), State Historic Preservation Officer (SHPO), and Caltrans went into effect for Caltrans projects, both state and local, with FHWA involvement. The PA implements the Advisory Council's regulations, 36 CFR 800, streamlining the Section 106 process and delegating certain responsibilities to Caltrans. The FHWA's responsibilities under the PA have been assigned to Caltrans as part of the Surface Transportation Project Delivery Program (23 United States Code [USC] 327).

Historic resources are considered under the California Environmental Quality Act (CEQA), as well as California Public Resources Code (PRC) Section 5024.1, which established the California Register of Historical Resources. PRC Section 5024 requires state agencies to identify and protect state-owned resources that meet National Register of Historic Places (NRHP) listing criteria. It further specifically requires to inventory state-owned structures in its rights-of-way. Sections 5024(f)

and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocating, or demolishing state-owned historic resources that are listed on or are eligible for inclusion in the National Register of Historic Places or are registered or eligible for registration as California Historical Landmarks.

Historic properties may also be covered under Section 4(f) of the U.S. Department of Transportation Act of 1966, which regulates the "use" of land from historic properties. See Appendix K for specific information about Section 4(f).

Affected Environment

Surveys of archaeological and historic architectural resources in the project study area were conducted in June 2004 and 2005 and are summarized in the Archaeological Survey Report (January 2007) and a Historic Property Survey Report (February 2006). The Area of Potential Effect (APE), in regards to archaeological sites, for the purposes of compliance with Section 106 of the NHRP is defined as the area that will be directly impacted by project activities, or the project "footprint", which includes right-of-way takes, construction staging areas and utility relocation sites. The architectural APE includes the proposed project area, potential easements, six adjacent parcels and it follows the State right-of-way of SR 29. The APE map was approved in February 2006. Subsequent site visits have shown that the condition of the archaeological site at the project location has not changed since the 2007 survey. Review of the current project description and plans confirm that the archaeological Area of Potential Effects (APE) is still valid. Review of the Architectural History APE and built resources within it confirm that the APE and surveys are still valid. Further surveys or studies are not needed at this time.

Files at the Northwest Information Center (NWIC) indicated that two historic properties previously listed or determined eligible for the NRHP were found within the project's APE: the Soscol House, listed on the NRHP on February 28, 1979, and archaeological site CA-NAP-15/H, a dual component site determined eligible by consensus through the Section 106 process in 1974.

Archaeology

The archaeological site contains a prehistoric component and historic component. The prehistoric component consists of a Native American habitation site while the historic component consists of the Soscol House and a Mexican rancho era stone foundation. While the foundation itself is reported to have been removed, deposits associated with historic Mexican and Native American use are likely still present in the site and are a significant contributing element to the eligibility of the site.

The archaeological site has been determined eligible for the NRHP because it has been demonstrated that the site has the potential to yield data important in history or prehistory.

Architectural History

The Soscol House was built as a roadhouse in c.1856. A substantial rear wing was added in c.1875. It is a simple two-story L-shaped wood frame building with minimal elements of Greek revival style. In 1977 the land on which the Soscol House originally stood was purchased by the State of California for the site of a new highway interchange project. That same year a private party purchased the building and, in 1979, the house was moved approximately 500 feet west of its original location. The new owners nominated the Soscol House as a historic property and it was listed on the NRHP on February 28, 1979. The Soscol House is currently used as a restaurant.

The Soscol House was reevaluated for the purposes of this undertaking, and determined to have retained its eligibility. The original evaluation stated that the property was determined eligible for the NRHP for its architectural significance and its historical significance in the areas of transportation and commerce. The reevaluation, however, found the property to no longer be eligible for its architectural significance, due to the substantial loss of original fabric. It was found to still be eligible in the areas of transportation and commerce, despite the fact that it was relocated prior to listing on the NRHP. The rural qualities of the setting of low grasslands along the Napa River have been retained, as well as its orientation

toward Soscol Ferry Road. The building is a rare example of an early roadhouse, and the only commercial structure remaining of the now-vanished Suscol settlement, and as such the Soscol House retains adequate integrity to be historically significant in the broad patterns of our history in the areas of transportation and commerce. The State Office of Historic Preservation concurred with the finding of the reevaluation of Soscol House in a letter dated June 8, 2006.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2:

A Finding of Effect Report was prepared in 2006 which analyzed the potential effects of the proposed project on historic properties identified within the Area of Potential Effect, namely the archaeological site CA-NAP-15/H, and the Soscol House.

C-1: Archaeological Resources

In a letter dated June 8, 2006, the State Historic Preservation Officer (SHPO) has concurred that the proposed project would result in an adverse effect to the archaeological site under Section 106 of the NHPA. A Memorandum of Agreement (MOA) which calls for recovery of the archaeological material was agreed upon in 2008. The Memorandum of Agreement (MOA) is in Appendix H of this document. The archaeological site would be impacted because the proposed project would result in the physical destruction to a substantial portion of the archaeological resource.

Architectural History

The proposed undertaking would cause no physical destruction or damage to the Soscol House; the building would not be altered; nor would the proposed project cause the ownership of the Soscol House to change. Although the Soscol House is no longer in its original location (it was moved from its original location to avoid demolition during a 1977/1978 highway project) the proposed flyover project would not cause it to be moved again. All project activities would take place within Caltrans right-of-way; there would be no direct impacts to the Soscol House property.

The introduction of visual elements within Caltrans right-of-way would not affect the integrity of the historic property. The flyover would be a new visual element introduced approximately 500 feet northeast of the rear façade, but it would not create a visual intrusion on the Soscol House because the setting, feeling and association of the historic property have already been compromised as a result of previous changes to the project area. As a moved property, Soscol House has already lost integrity of location. Because the Soscol House is oriented away from the project area, the flyover would not diminish the integrity of the property's historic features. No tree removal that would visually impact the property is anticipated. However, when possible, new and replacement trees would be planted in select locations adjacent to the flyover and access ramps to screen the view from the vista point and the rear of the Soscol House. Access to the Soscol House would remain the same; traffic would still be directed from State Route 29 onto Soscol Ferry Road. The changes to the connector roads would have no impact on the Soscol House.

Although the proposed project may introduce some new audible elements, any increase in traffic noise is expected to be well below the federal noise abatement criteria of 67 dBA (see chapter 2.2.7 for noise studies), and any construction noise would be temporary in nature. Such minimal noise increase would not affect the continued use of Soscol House, nor diminish the integrity of the significant historic features of the property.

Additionally the proposed project would not affect the property as a result of vibration generated during construction. The closest piles that would be driven for the proposed project would be approximately 500 feet away from Soscol House. At this distance any vibrations would have abated far below the levels that could produce damage to the structure.

In summary, the addition of a flyover, which has the same general scale and mass as the adjacent Napa River Bridge, would not further erode the integrity of the setting. Because the historic Soscol House is oriented away from the project area, the undertaking would not introduce a new visual element that is significant enough

to diminish the integrity of the property's significant historic features. Therefore the proposed project undertaking would have no adverse effect on this historic property, as defined by 36 CFR 800.5(a)(2) of the NHPA. For the purposes of the California Environmental Quality Act (CEQA), pursuant to Title 14, Chapter 3, Section 15064.5(b), this undertaking will not cause a substantial adverse change in the significance of this historic resource because the significance of the resource would not be materially impaired.

In a letter dated June 8, 2006, the State Historic Preservation Officer (SHPO) concurred that the proposed project would result in a no adverse effect to the Soscol House property under Section 106 of the NHPA.

Section 4(f)

As a historic property, Caltrans identified the Soscol House as a 4(f) resource under provisions of the U.S. Department of Transportation Act. However the proposed project would not directly impact this property through permanent physical occupancy or temporary occupancy. The project would also not cause indirect effects through alterations in visual or cultural setting of the property. Consequently, the Build Alternatives do not trigger Section 4(f) protection because the project does not permanently use the property and does not hinder the preservation of the property.

Caltrans identification and evaluation of the resource is discussed in greater detail in Appendix K, "Resources Evaluated Relative to the Requirements of 4(f)."

The resource is discussed in greater detail in Appendix K, "Resources Evaluated Relative to the Requirements of 4(f)."

***No Build Alternative*:** There would be no impacts to Cultural Resources under the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

C-1: Caltrans' project development process involved modifications to the Build Alternative to avoid and minimize project-related impacts to cultural resources in consultation with professionally qualified staff and the SHPO. Nevertheless, total avoidance of archaeological resources is not achievable because of the scale of the proposed construction and engineering constraints.

While Caltrans has made every effort to identify historic resources, if cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area will be halted until a qualified archaeologist can assess the nature and significance of the find.

If human remains are discovered, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains, and the County Coroner contacted. Pursuant to CA Public Resources Code (PRC) Section 5097.98, if the remains are thought to be Native American, the coroner shall notify the Native American Heritage Commission (NAHC), which will then notify the Most Likely Descendent (MLD). At this time, the Resident Engineer will contact Elizabeth McKee, Chief of the Office of Cultural Resource Studies so that they may work with the MLD on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Memorandum of Agreement

To resolve adverse effects, under Section 106 of the NHPA, of the proposed project on the archaeological site, Caltrans has consulted with and continues to consult with the SHPO and interested Native American groups. A Memorandum of Agreement (MOA) has been developed to identify mechanisms for treatment of historic properties, primarily through recovery of important data that would be destroyed by construction of the proposed project (Appendix H). The MOA also outlines procedures for treatment of historic properties inadvertently discovered during construction. Under this MOA, an Archaeological Treatment Plan has been

developed. The MOA stipulates that a Data Recovery Proposal will be prepared once specific detailed construction impacts are available. The Data Recovery proposal will be consistent with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation.

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.

To comply, the following must be analyzed:

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

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

Affected Environment

The regional climate is characterized by cool wet winters and warm dry summers. Average temperatures throughout the year range from a low of 38 degrees Fahrenheit (°F) in December to a high of 83°F in July and August. The average annual rainfall recorded at the Napa State Hospital weather station (located approximately 6.4 km (4 mi) north of the project area) is 63.5 centimeters [cm] (25 inches), with the majority (83 percent) of the annual precipitation occurring between November and March (Western Regional Climate Center 2008).

The project area is located within the San Pablo Bay Hydrologic Unit (1805002), which has a drainage area of approximately 31,982 hectares [ha] (79,028 acres [ac])

(BIOS 2008). The Napa River is located approximately 1.6 km (1 mi) west of SR 29, immediately adjacent to the west end of the project study area. No natural lakes are located in the vicinity of the project area. Suscol Creek and Sheehy Creek are the primary drainage features located within and adjacent to the study area and are the only features identified on the National Wetland Inventory Map. Two ephemeral creeks, one south and one north of Suscol Creek, convey flows from the vicinity of the project study area to the west into the salt evaporation ponds and the Napa River, respectively. Several small ephemeral swales and erosion drainages also occur throughout the study area and convey roadside and stormwater runoff into the adjacent grassland areas. These features do not appear to have any direct or indirect connections to other waters in the project vicinity, including the Napa River.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: A Summary Floodplain Encroachment Report was completed in January 2010 (see Appendix E). While the proposed project would cross Suscol Creek, the map below (Figure 2-13) indicates that the creek is contained within its banks in the proposed project limit. The proposed project is not located within a Federal Emergency Management Agency (FEMA) base floodplain (see Figure 2-13); therefore, there would not be a significant encroachment on the base floodplain.

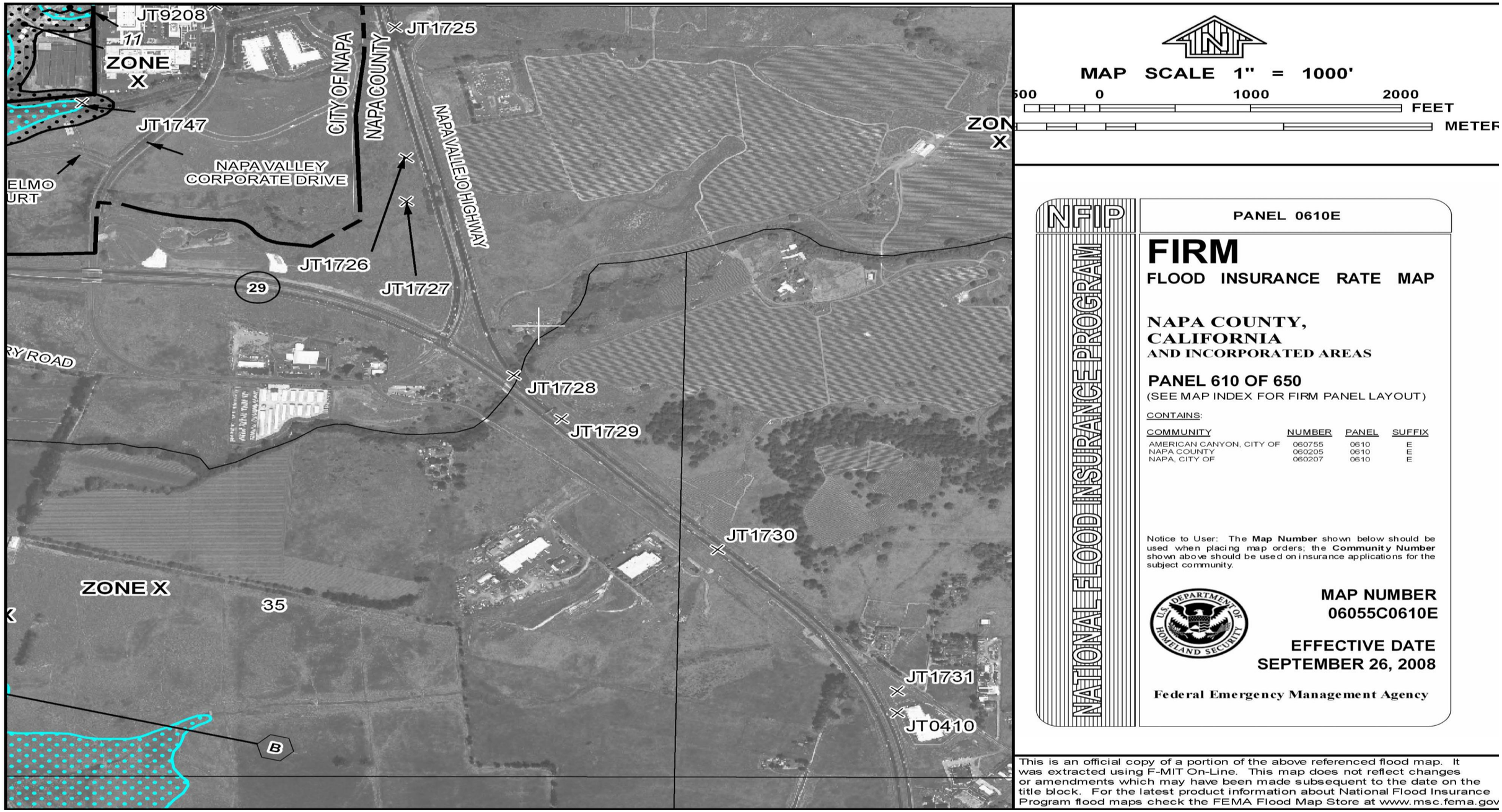
***No Build Alternative*:** There would be no impacts to Hydrology under the No Build Alternative.

Avoidance, Mitigation and/or Minimization Measures

Alternative 5, Option 1 & Alternative 5, Option 2: No avoidance, minimization, and/or mitigation measures are proposed.

***No Build Alternative*:** No avoidance, minimization, and/or mitigation measures are proposed.

Figure 2-13 National Flood Insurance Program Map



2.2.2 WATER QUALITY AND STORMWATER RUNOFF

Regulatory Setting

Federal Requirements: Clean Water Act

In 1972, Congress amended the Federal Water Pollution Control Act, making the addition of pollutants to the waters of the United States (U.S.) from any point source[4] unlawful unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. This act and its amendments are known today as the Clean Water Act (CWA). Congress has amended the act several times. In the 1987 amendments, Congress directed dischargers of storm water from municipal and industrial/construction point sources to comply with the NPDES permit scheme. The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.

- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).

- Section 402 establishes the NPDES, a permitting system for the discharges (except for dredge or fill material) of any pollutant into waters of the U.S. Regional Water Quality Control Boards (RWQCB) administer this permitting program in California. Section 402(p) requires permits for discharges of storm water from industrial/construction and municipal separate storm sewer systems (MS4s).

- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the U.S. This permit program is administered by the U.S. Army Corps of Engineers (USACE).

[4] A point source is any discrete conveyance such as a pipe or a man-made ditch.

The goal of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."

The USACE issues two types of 404 permits: General and Standard permits. There are two types of General permits: Regional permits and Nationwide permits. Regional permits are issued for a general category of activities when they are similar in nature and cause minimal environmental effect. Nationwide permits are issued to allow a variety of minor project activities with no more than minimal effects.

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of the USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with United States Environmental Protection Agency's (U.S. EPA) Section 404 (b)(1) Guidelines (U.S. EPA Code of Federal Regulations [CFR] 40 Part 230), and whether the permit approval is in the public interest. The Section 404(b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S. and not have any other significant adverse environmental consequences. According to the Guidelines, documentation is needed that a sequence of avoidance, minimization, and compensation measures has been followed, in that order. The Guidelines also restrict permitting activities that violate water quality or toxic effluent[5] standards, jeopardize the continued existence of listed species, violate marine sanctuary protections, or cause "significant degradation" to waters of the U.S. In addition, every permit from the USACE, even if not subject to the Section 404(b)(1) Guidelines, must meet general requirements. See 33 CFR 320.4. A discussion of

[5] The U.S. EPA defines "effluent" as "wastewater, treated or untreated, that flows out of a treatment plant, sewer, or industrial outfall."

the LEDPA determination, if any, for the document is included in the Wetlands and Other Waters section.

State Requirements: Porter-Cologne Water Quality Control Act

California's Porter-Cologne Act, enacted in 1969, provides the legal basis for water quality regulation within California. This act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or gaseous) to land or surface waters that may impair beneficial uses for surface and/or groundwater of the state. It predates the CWA and regulates discharges to waters of the state. Waters of the State include more than just waters of the U.S., like groundwater and surface waters not considered waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA.

The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) are responsible for establishing the water quality standards (objectives and beneficial uses) required by the CWA, and regulating discharges to ensure compliance with the water quality standards. Details about water quality standards in a project area are included in the applicable RWQCB Basin Plan. In California, Regional Boards designate beneficial uses for all water body segments, and then set criteria necessary to protect these uses. As a result, the water quality standards developed for particular water segments are based on the designated use and vary depending on that use. In addition, the SWRCB identifies waters failing to meet standards for specific pollutants. These waters are then state-listed in accordance with CWA Section 303(d). If a state determines that waters are impaired for one or more constituents and the standards cannot be met through point source or non-point source controls (NPDES permits or WDRs), the CWA requires the establishment of Total Maximum Daily Loads (TMDLs). TMDLs

specify allowable pollutant loads from all sources (point, non-point, and natural) for a given watershed.

State Water Resources Control Board and Regional Water Quality Control Boards

The SWRCB administers water rights, sets water pollution control policy, and issues water board orders on matters of statewide application, and oversees water quality functions throughout the state by approving Basin Plans, TMDLs, and NPDES permits. RWCQBs are responsible for protecting beneficial uses of water resources within their regional jurisdiction using planning, permitting, and enforcement authorities to meet this responsibility.

National Pollutant Discharge Elimination System (NPDES) Program

Municipal Separate Storm Sewer Systems (MS4)

Section 402(p) of the CWA requires the issuance of NPDES permits for five categories of storm water discharges, including Municipal Separate Storm Sewer Systems (MS4s). An MS4 is defined as "any conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, human-made channels, and storm drains) owned or operated by a state, city, town, county, or other public body having jurisdiction over storm water, that is designed or used for collecting or conveying storm water." The SWRCB has identified Caltrans as an owner/operator of an MS4 under federal regulations. Caltrans' MS4 permit covers all Caltrans rights-of-way, properties, facilities, and activities in the state. The SWRCB or the RWQCB issues NPDES permits for five years, and permit requirements remain active until a new permit has been adopted.

Caltrans' MS4 Permit (Order No. 2012-0011-DWQ) was adopted on September 19, 2012 and became effective on July 1, 2013. The permit has three basic requirements:

1. Caltrans must comply with the requirements of the Construction General Permit (see below);

2. Caltrans must implement a year-round program in all parts of the State to effectively control storm water and non-storm water discharges; and

3. Caltrans storm water discharges must meet water quality standards through implementation of permanent and temporary (construction) Best Management Practices (BMPs), to the Maximum Extent Practicable, and other measures as the SWRCB determines to be necessary to meet the water quality standards.

To comply with the permit, Caltrans developed the Statewide Storm Water Management Plan (SWMP) to address storm water pollution controls related to highway planning, design, construction, and maintenance activities throughout California. The SWMP assigns responsibilities within Caltrans for implementing storm water management procedures and practices as well as training, public education and participation, monitoring and research, program evaluation, and reporting activities. The SWMP describes the minimum procedures and practices Caltrans uses to reduce pollutants in storm water and non-storm water discharges. It outlines procedures and responsibilities for protecting water quality, including the selection and implementation of BMPs. The proposed project will be programmed to follow the guidelines and procedures outlined in the latest SWMP to address storm water runoff.

Construction General Permit

Construction General Permit (Order No. 2009-009-DWQ), adopted on September 2, 2009, became effective on July 1, 2010. The permit regulates storm water discharges from construction sites that result in a Disturbed Soil Area (DSA) of one acre or greater, and/or are smaller sites that are part of a larger common plan of development. By law, all storm water discharges associated with construction activity where clearing, grading, and excavation result in soil

disturbance of at least one acre must comply with the provisions of the General Construction Permit. Construction activity that results in soil disturbances of less than one acre is subject to this Construction General Permit if there is potential for significant water quality impairment resulting from the activity as determined by the RWQCB. Operators of regulated construction sites are required to develop storm water pollution prevention plans; to implement sediment, erosion, and pollution prevention control measures; and to obtain coverage under the Construction General Permit.

The 2009 Construction General Permit separates projects into Risk Levels 1, 2, or 3. Risk levels are determined during the planning and design phases, and are based on potential erosion and transport to receiving waters. Requirements apply according to the Risk Level determined. For example, a Risk Level 3 (highest risk) project would require compulsory storm water runoff pH and turbidity monitoring, and before construction and after construction aquatic biological assessments during specified seasonal windows. For all projects subject to the permit, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with the Department's Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with DSA less than one acre.

Section 401 Permitting

Under Section 401 of the Clean Water Act (CWA), any project requiring a federal license or permit that may result in a discharge to a water of the U.S. must obtain a 401 Certification, which certifies that the project will be in compliance with state water quality standards. The most common federal permits triggering 401 Certification are CWA Section 404 permits issued by the USACE. The 401 permit certifications are obtained from the appropriate Regional Water Quality Control Board, dependent on the project location, and are required before the USACE issues a 404 permit.

In some cases, the RWQCB may have specific concerns with discharges associated with a project. As a result, the RWQCB may issue a set of requirements known as Waste Discharge Requirements (WDRs) under the State Water Code (Porter-Cologne Act) that define activities, such as the inclusion of specific features, effluent limitations, monitoring, and plan submittals that are to be implemented for protecting or benefiting water quality. WDRs can be issued to address both permanent and temporary discharges of a project.

Affected Environment

This section of the document was based upon information in the Water Quality Report (February 2012). This report is available upon request (Contact Stefan Galvez, District 4, Office of Environmental Analysis at Stefan.Galvez@dot.ca.gov).

The study area is situated on gradually sloping to hilly terrain; the highest elevation is approximately 56.4 m (185 ft). Suscol Creek and an unnamed ephemeral drainage, the north tributary to Sheehy Creek, drain the hillsides of the project area into the Napa River and eventually into the San Pablo Bay. Suscol Creek is not identified as an impaired water. Although Caltrans staff has observed the reach of the creek adjacent to the project as being dry during surveys, Suscol Creek's beneficial uses are identified to include: recreation, aquatic life uses, and wildlife uses in the San Pablo Basin plan (California Regional Water Quality Control Board, San Francisco Bay Basin Plan, December 2010).

Surface Water

The project is located within the Napa River Hydrologic Area and is within the limits of the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) jurisdiction (Region 2). Stormwater from the project area drains into Suscol Creek which is a tributary to Napa River, and ultimately to San Pablo Bay. The SFBRWQCB is responsible for implementation of State and Federal water quality laws and regulations for this project.

The average annual rainfall within the project area is 63.5 cm (25 in). Storm water from the project area drains into Suscol Creek and Napa River, which is less than

1.6 km (1 mile) from the proposed project site; the Napa River is a tributary to the San Pablo Bay. Established beneficial uses of the Napa River include: agricultural supply, municipal and domestic supply, navigation, cold and warm freshwater habitat, contact and non-contact water recreation, spawning, reproduction, early development, and wildlife habitat. Established beneficial uses for San Pablo Bay include: industrial service supply, fishing (ocean, commercial, and sport), shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, contact and non-contact water recreation, and navigation.

Under Section 303(d) of the 1972 Clean Water Act, states, 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. Both the Napa River and the San Pablo Bay are on the EPA's 303(d) List of Water Quality Limited Segments. Pollutants of concern for the Napa River are: Nutrients, Pathogens, and Sedimentation/Siltation; and for San Pablo Bay: Chlordane, DDT, Diazanon, Dieldrin, Dioxin Compounds, Exotic Species, Furan Compounds, Mercury, Nickel, PCBs, and Selenium.

The Region 2 SFBRWQCB Basin Plan has also established beneficial uses for Napa River, which are: agricultural supply, municipal and domestic supply, cold and warm freshwater habitat, navigation, contact- and non-contact water recreation, wildlife habitat, and spawning, reproduction, and/or early development, and for San Pablo Bay: industrial service supply, ocean, commercial, and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, contact and non-contact water recreation, and navigation.

The water bodies that the project would discharge to directly are not listed on EPA's 303(d) List of Water Quality Limited Segments**.** The proposed project would still need to consider issues related to water bodies on the 303(d) list because Napa River is less than a mile away.

Another component of surface water is roadway runoff. Caltrans has performed many studies to monitor and characterize highway storm water runoff throughout the State. Some of the commonly found pollutants are: Total Suspended Solids, which are solids in water that can be trapped by a filter and include a wide variety of material such as silt, decaying plant and animal matter, industrial wastes and sewage; nutrients; pesticides; metals (particulate and dissolved); pathogens; litter; Biochemical Oxygen Demand, which is the amount of dissolved oxygen needed by aerobic biological organisms in a body of water to break down organic material present in a given water sample; Total Dissolved Solids, which are the total amount of mobile charged ions, including minerals, salts or metals dissolved in a given volume of water; zinc (total or dissolved); phosphorous; copper (total or dissolved); sediments; and general metals.

Groundwater

The proposed Soscol Junction Project is located in the Napa-Sonoma Valley Groundwater Basin. The existing beneficial uses of this groundwater resource, according to the Basin Plan, include: municipal and domestic water supply, industrial process and service water supply, and agricultural water supply.

Environmental Consequences

Surface Water

Alternative 5, Option 1 & Option 2: The area of soil disturbance for Alternative 5, Option 1 would be approximately 10.4 ac, of which 7.1 ac is additional impervious area. The area of soil disturbance for Alternative 5, Option 2 would be approximately 11.5 ac, of which 9.0 ac is additional impervious area. The additional impervious area from the proposed project would increase roadway runoff, causing a faster and larger pick in the proposed project's hydrograph[6]. The project would not alter drainage patterns within the project area or watershed, and no streams or rivers would be altered in a way that would cause substantial on- or off-site erosion or flooding . During the project's design phase, Caltrans would incorporate permanent

[6] A hydrograph is a graph showing discharge, or flow (typically expressed as "feet^3/second") versus time (typically expressed as "hour").

treatment BMPs to reduce the rate of stormwater discharge and treat pollutants using the best available technology including, but not limited to, biostrips and bioswales. Stormwater treatment BMPs would be located in areas where soil disturbance would occur due to construction activities. In addition, sections of the local connector roads that are abandoned as a result of the left-turn lane closure under both Build Alternatives would be closed off and the resulting area would be reclaimed with new vegetation in these areas. Biologically sensitive areas, such as wetlands and waters, would not be used as areas for treatment BMPs. Therefore, no permanent impacts to surface waters are anticipated.

Construction Site BMP's would be implemented during construction to manage dust, turbidity, air pollution and water pollution including sediment and Ph. Construction Site BMPs are implemented during construction activities and designed to limit potential pollutants at their source before they come in contact with storm water. Caltrans Construction Site BMPs are divided into six categories: Temporary Soil Stabilization, Temporary Sediment Control, Wind Erosion Control, Tracking Control, Non-Storm Water Management, and Waste Management and Materials Pollution Control. Some of the BMPs that may be utilized to prevent and minimize soil erosion and sediment discharges during construction are Street Sweeping and Vacuuming, Concrete Waste Management, Stockpile Management, and Stabilized Construction Entrance/Exit. Therefore no temporary impacts to surface waters are anticipated.

***No Build Alternative*:** No impacts to surface water are anticipated under the No Build Alternative.

Groundwater

Alternative 5, Option 1 & Alternative 5, Option 2: Ground water may be encountered during foundation work. The ground water would be tested as a part of the Hazardous Waste Site Investigation. Proper handling and disposal of the groundwater would be based on the results of the Site Investigation Report and incorporated into Construction BMPs..

***No Build Alternative*:** No impacts to groundwater are anticipated under the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: Permanent treatment BMPs would be incorporated into the project design using the best available technology to reduce the rate of stormwater runoff and remove pollutants due to added pavement. Consequently, no additional avoidance, minimization, and or mitigation measures are recommended. Caltrans use of construction site BMP's to manage dust, turbidity, air pollution and water pollution including sediment and Ph requires no additional avoidance, minimization, and/or mitigation measures.

***No Build Alternative*:** There would be no impacts to Water Quality under the No Build Alternative and no avoidance, minimization or mitigation measures would be proposed.

2.2.3 GEOLOGY/SOILS/SEISMIC/TOPOGRAPHY

Regulatory Setting

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

This section also discusses geology, soils, and seismic concerns as they relate to public safety and project design. Earthquakes are prime considerations in the design and retrofit of structures. Caltrans Division of Engineering is responsible for assessing the seismic hazard for Department projects. Structures are designed using the Department's Seismic Design Criteria (SDC). The SDC provides the minimum seismic requirements for highway bridges designed in California. A bridge's category and classification will determine its seismic performance level and which methods are used for estimating the seismic demands and structural capabilities, For more information, please see the Department's Division of Engineering Services (http://www.dot.ca.gov/hq/esc/).

Affected Environment

Regional Geology

The project site is located within the California Coast Ranges geomorphic province. Extensive folding has created a series of northwest trending ranges and valleys. One of which is the San Francisco Bay. San Francisco Bay drains 40% of California via the Sacramento and the San Joaquin Rivers through the Golden Gate to the Pacific Ocean. The San Andreas fault forms the boundary between the Pacific plate and the North American plate, and was formed following the cessation of the subduction of the Farallon plate. Once the plate was subducted, the San Andreas fault was the new contact and was between the Pacific plate and the North American plate. This fault is a right lateral strike slip fault and is part of a larger system

including the West Napa and the Green Valley faults, which accommodate the stresses formed by the migrating plates.

Site Geology

The proposed project is underlain by early to middle Pleistocene fan or terrace deposits. Soscol and Sheehy creeks have deposited Holocene alluvium in the flatlands on the west side of the project. In the hills to the east, the creeks are entrenched in Pleistocene to Holocene alluvial sediments. At locations in the middle of the project a few landslide deposits exist. At the junction of SR 221 and 29 the Sonoma Volcanics underlie the roadway, which consist of basalt to rhyolite flows, agglomerates and tuffs. Near the center of the project on SR29, the gray-brown, sandy Capay Shale (Eocene) and the San Pablo Group (Miocene), a brown, gray, white marine sandstone with minor conglomerates, form the hills to the east of the road. While at the southern end of the project, the Pliocene Huichica Formation underlies the area. This formation is formed by deposits of fluvial gravels, sand, silt and clay, derived from the Sonoma Volcanics.[7]

Faulting and Seismicity

The project site is located within a seismically active region dominated by the northwest trending San Andreas fault. Several other faults that parallel the San Andreas make up the larger San Andreas fault system and separate the Pacific plate on the west from the North American plate to the east. The San Andreas fault system can be thought of as a diffuse plate boundary at which strain is spread across a wide region. There are larger, well-known faults within the system that tend to be the most active; however, there are other unnamed faults that are not mapped that may produce moderate earthquakes.

[7] CGS: 2002: GEOLOGIC MAP OF THE CUTTINGS WHARF 7.5' QUADRANGLE, NAPA AND SOLANO COUNTIES, CALIFORNIA: A DIGITAL DATABASE VERSION 1.0: By S. Bezore, C. E. Randolph-Loar, and R. C. Witter

There are numerous active faults within the northern San Francisco Bay Area that have the potential to produce large earthquakes, such as: the West Napa fault zone (Browns Valley section), West Napa fault zone (Napa County Airport section) and Green Valley fault. The closest of these faults is the West Napa fault zone (Browns Valley section), which is within 1.5 miles of the project site. This fault is a right-lateral strike-slip fault that dips 90 degrees relative to horizontal. Based on the Caltrans ARS Online Application, this fault is the controlling fault for the proposed project. Table 2-10 presents the seismic data for the closest faults to the proposed project. Data is from Caltrans 2007 Seismic Hazard Report Database and Caltrans ARS Online (v2.2.06). Maximum Credible Earthquakes are given in Mw (moment magnitude) and are a function of the length and width of a fault zone and not of recent or historical events.

Table 2-10 Predicted Maximum Credible Earthquake and Acceleration for Faults near the Proposed Project

FAULT	Fault No.	Distance (Miles)	Fault Type	Maximum Credible Earthquake	Peak Ground Acceleration (560m/s shear wave velocity)
West Napa fault zone (Browns Valley section)	106	1.4	Right Lateral Strike Slip	6.6 106	0.47g
West Napa fault zone (Napa County Airport section)	114	1.5	Right Lateral Strike Slip	6.6	0.47g
Green Valley	108	5.7	Right Lateral Strike Slip	6.8	0.28g
Probabilistic Model USGS Seismic Hazard Map(2008) 975 Year Return Period, calculated at 560m/s					0.56g

Seismic Hazards

Potential seismic hazards in such an active region include primary surface rupture, seismic fault creep, and secondary effects due to strong ground shaking. The following describes the hazards that may be encountered during either surface rupture or ground shaking and possible procedures to use during design and/or construction.

Primary Seismic Hazards Surface rupture and fault creep:

There are no active faults that cross the project limits, therefore, fault rupture and fault creep are not considered to pose a hazard to the proposed project.

Ground shaking:

The potential for strong ground shaking in the project area during the life of the project is high and would affect both roadways and structures. Loose, saturated soils pose the greatest threat during episodes of strong shaking. The following lists possible hazards that may be caused by strong ground shaking and the probability of their occurrence within the project limits.

Liquefaction:

Liquefaction potential, a phenomenon in which soils lose all shear strength and turn essentially to fluids, is considered very high in the project area. Potentially liquefiable deposits are generally composed of clean sand with a high ratio of void space. Future subsurface sampling would indicate if the soil is liquefiable. Near Soscol and Sheehy Creeks the potential for liquefaction is moderate to high; all other portions of the proposed project are very low.

Landslides:

At the center of the proposed project historic landslides are present, therefore there is a potential for landslide in sloped areas.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2:

The proposed project would not impact unique geologic units or features. Hazards due strong ground shaking including liquefaction will be avoided through standard design procedures for embankment and structure foundations. While historic

landslides are present, the proposed project will not introduce additional hazards to those already present.

***No Build Alternative*.** There would be no impacts to Geology/Soils/Seismic/Topography under the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: No avoidance, minimization, and/or mitigation measures are proposed.

No Build Alternative: No avoidance, minimization, and/or mitigation measures are proposed.

2.2.4 PALEONTOLOGY

Regulatory Setting

Paleontology is a natural science focused on the study of ancient animal and plant life as it is preserved in the geologic record as fossils. A number of federal statutes specifically address paleontological resources, their treatment, and funding for mitigation as a part of federally authorized or funded projects. (e.g., Antiquities Act of 1906 [16 USC 431-433], Federal-Aid Highway Act of 1956 [23 USC 305] and the Omnibus Public Land Management Act of 2009 [16 USC 470aaa]). Under California law, paleontological resources are protected by the California Environmental Quality Act (CEQA).

Affected Envrionment

According to the Preliminary Geotechnical Report (PGR) prepared in November 21, 2013 by the Caltrans Geotechnical Design Office, and the Paleontological Identification Report (PIR) prepared in July 2011 by Garcia and Associates (GANDA), the geologic units included in the project area are: Holocene Alluvium, Pleistocene Alluvium and Volcanic rocks. These documents are available for review upon request. Each geological unit in the project area is classified by a rating system that indicates both the potential for occurrence of certain minerals, as well as the quantity and quality of data on which the rating is based on. The sensitivity of the units is classified as follows:

High Potential

Rock units which, based on previous studies, contain or are likely to contain significant vertebrate, significant invertebrate, or significant plant fossils. These units include, but are not limited to, sedimentary formations that contain significant nonrenewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. These units may also include some volcanic and low-grade metamorphic rock units. Fossiliferous deposits with very limited geographic extent or an uncommon origin (e.g., tar pits and caves) are given special consideration and

ranked as highly sensitive. High sensitivity includes the potential for containing: 1) abundant vertebrate fossils; 2) a few significant fossils (large or small vertebrate, invertebrate, or plant fossils) that may provide new and significant taxonomic, phylogenetic, ecologic, and/or stratigraphic data; 3) areas that may contain datable organic remains older than Recent, including Neotoma (sp.) middens; or 4) areas that may contain unique new vertebrate deposits, traces, and/or trackways. Areas with a high potential for containing significant paleontological resources require monitoring and mitigation.

Low Potential

This category includes sedimentary rock units that: 1) are potentially fossiliferous, but have not yielded significant fossils in the past; 2) have not yet yielded fossils, but possess a potential for containing fossil remains; or 3) contain common and/or widespread invertebrate fossils if the taxonomy, phylogeny, and ecology of the species contained in the rock are well understood. Sedimentary rocks expected to contain vertebrate fossils are not placed in this category because vertebrates are generally rare and found in more localized stratum. Rock units designated as low potential generally do not require monitoring and mitigation. However, as excavation for construction gets underway it is possible that new and unanticipated paleontological resources might be encountered. If this occurs, a Construction Change Order (CCO) must be prepared in order to have a qualified Principal Paleontologist evaluate the resource. If the resource is determined to be significant, monitoring and mitigation is required.

No Potential

Rock units of intrusive igneous origin, most extrusive igneous rocks, and moderately to highly metamorphosed rocks are classified as having no potential for containing significant paleontological resources. For projects encountering only these types of rock units, paleontological resources can generally be eliminated as a concern and no further action taken.

As part of the PIR preparation, a field survey was done in May 2011, of a paleontological study area (PSA), encompassing the 1.1 mi project boundary and a ¼ mi buffer, in which no paleontological resources were observed. A literature review as well as an online fossil locality search (using the Berkeley Natural History Museum (BNHM) online database) was conducted for Napa County. Sixty-one fossil localities were found within Napa County during the search. An additional fossil locality search of the PSA was completed by Dr. Pat Holroyd of the University of California Museum of Paleontology (UCMP), Berkeley. There were no recorded fossil localities within or directly adjacent to the PSA. All geological units and their paleontological sensitivity are described below and indicated on Figure 2-14.

Meganos Formation (Tm)

This formation has been identified to be fossiliferous and contains microfossils and invertebrates predominantly consisting of Bivalves and Gastropods (UCMP, 2011; Clark, 1927). The Meganos Formation is studied for its diverse and age specific molluscan and algal faunal assemblages (Johnson et al., 1953) This paleontological unit contains a high paleontological sensitivity.

Cierbo sandstone (Tc)

This marine formation, which does not succeed the underlying older rocks in age or in parallel position due to a long period of erosion, underlies the Meganos Formation and includes abundant fossil oysters and pectens (Throckmorton, 1988). There are also known vertebrate localities from the Cierbo sandstone in neighboring Contra Costa County (UCMP, 2010). This geological unit has a high paleontological sensitivity.

Sonoma Volcanics (Tpmv)

This formation can contain plant and fish fossils as well as vertebrate fossils (UCMP, 2011). In Napa County only two vertebrate fossil localities are known from this formation (from the horse family), whereas 29 vertebrate fossil localities are recorded in Solano County. The Sonoma Volcanics are still not well understood and the fossil assemblages found in them are instrumental in deciphering this part of

Californian geological history (Fox, 1983). Volcanic rocks within the project area belong to the Sonoma Volcanics. However, there are two fossil localities (intact fossils of the horse family) located in the Sonoma Volcanics within a 15-mile radius of the project area; therefore, the Volcanic rocks are considered to have a high paleontological sensitivity.

Early Pleistocene Alluvium (Qoa)

Described as Pleistocene fan or terrace deposits, these deposits are located moderately to deeply beneath highly developed soils. Consisting of poorly sorted silt, sand and gravel, they can be found within the proposed project study area as relatively flat lying sediments. This geological unit has low paleontological sensitivity.

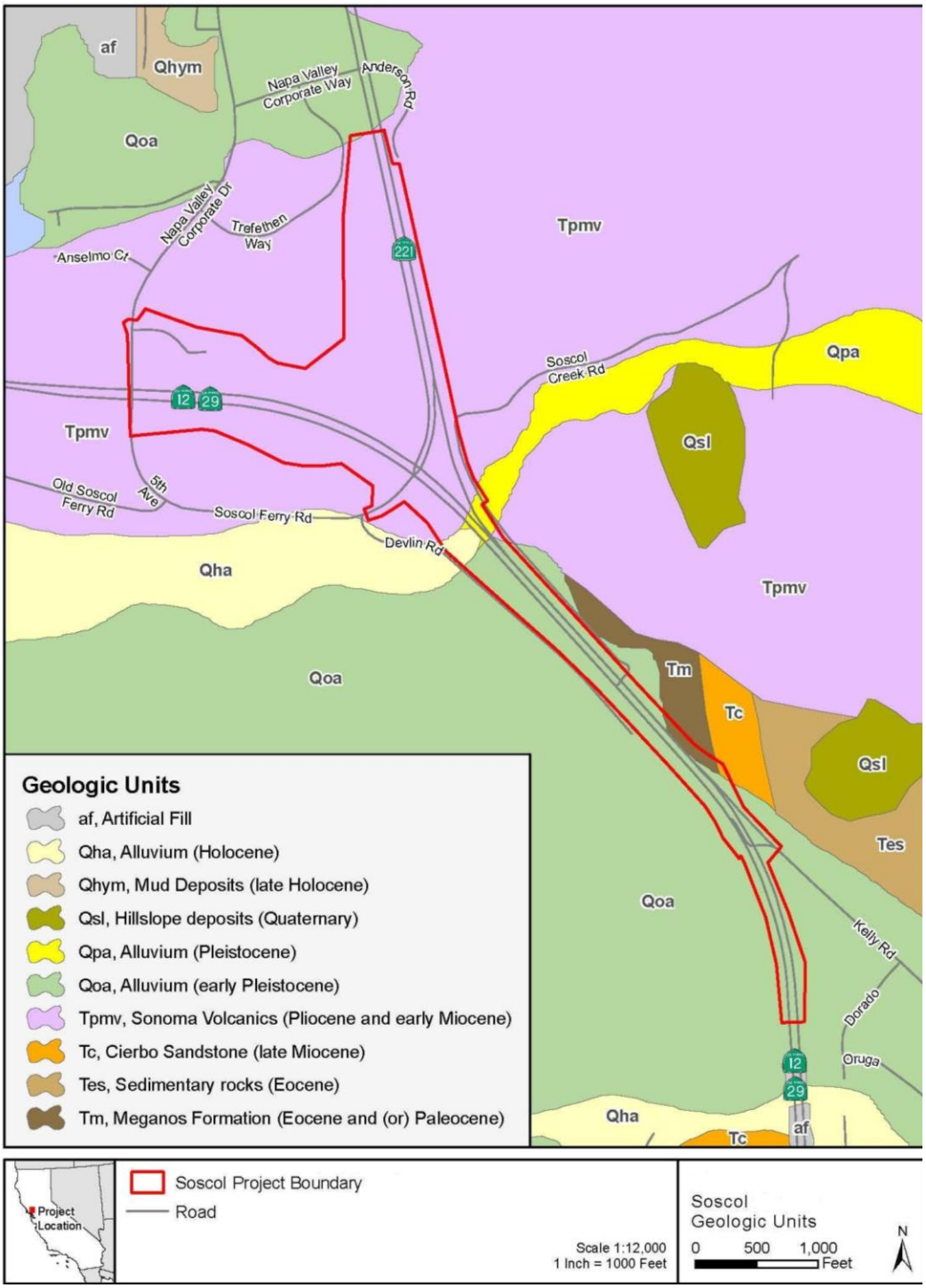
Pleistocene Alluvium (Qoa, Qpa)

The majority of the alluvium in the project area has been identified as Pleistocene Alluvium. Locally, these sediments contain invertebrate and extinct vertebrate fossils. Vertebrate fossils found in Late Pleistocene alluvium are representative of the Rancholabrean land mammal age from which many are now extinct and include but are not limited to bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles and amphibians (Bell et al., 2004; Helley et al., 1979; Hertlein, 1951; Savage, 1951; Stirton, 1951). These alluvial deposits have a high paleontological sensitivity.

Holocene Alluvium (Qha)

This unit may contain only vertebrate and invertebrate fossils of living, modern organisms (Helley et al., 1979) which is generally not considered sensitive and has no paleontological sensitivity.

Figure 2-14 Geological Units within the Project Area



Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: C-2: Because the specific locations of the paleontological resources are unknown, impacts are not predetermined and cannot be quantified until construction begins.

Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impacts previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. This can result in adverse impacts to fossils by destroying them or otherwise altering them in such a way that their scientific value is lost.

The proposed project includes ground-disturbing activities. The average maximum depth of planned excavation is 3 m (9.8 ft) deep in order to install the supports for the flyover structure. These ground-disturbing activities within the proposed project footprint could potentially impact paleontological resources as the above-mentioned paleontologically sensitive geological formations are exposed at the surface or directly underneath a layer of artificial fill.

***No Build Alternative*:** Paleontological resources would not be disturbed under the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: C-2: Geologic formations are usually extensive and project design cannot be adjusted sufficiently to effectively avoid paleontological impacts.

The following measures are recommended and would be effective in reducing any potential impacts in accordance with Caltrans' Standard Environmental Reference Guidelines (Caltrans, 2013):

- A Paleontological Mitigation Plan (PMP), to define specific mitigation measures and methods, will be prepared and implemented before construction begins.
- The PMP may include:
    - The presence of the Principal Paleontologist at pre-construction meetings to consult with the construction contractor.
    - Paleontological awareness training for construction workers provided by the Principal Paleontologist.

- Monitoring of ground disturbing activities such as excavation by the paleontological monitors under the direction of the Principal Paleontologist.
- Temporary halting or diversion of construction activities in areas where fossils are discovered.
- Preparation, sorting, and cataloging of fossils collected during the monitoring and salvage. Fossils are prepared to the point of identification, not display. Curation of fossils, along with copies of all pertinent field notes, photos, and maps at a curation facility acceptable to Caltrans. Preparation of the Paleontological Mitigation Report which documents the results of the mitigation program.

No Build Alternative: No avoidance, minimization, and/or mitigation measures are proposed.

2.2.5 HAZARDOUS WASTE/MATERIALS

Regulatory Setting

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

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

- Community Environmental Response Facilitation Act (CERFA) of 1992
- Clean Water Act
- Clean Air Act
- Safe Drinking Water Act
- Occupational Safety and Health Act (OSHA)
- Atomic Energy Act
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

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

California regulates hazardous materials, waste, and substances under the authority of the CA Health and Safety Code and is also authorized by the federal government to implement RCRA in the state. California law also addresses specific handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning of hazardous waste. The Porter-Cologne Water Quality Control Act also restricts disposal of wastes and requires clean up of wastes that are below hazardous waste concentrations but could impact ground and surface water quality. California regulations that address waste management and prevention and clean-up of contamination include Title 22 Division 4.5 Environmental Health Standards for

the Management of Hazardous Waste, Title 23 Waters, and Title 27 Environmental Protection.

Worker and public health and safety are key issues when addressing hazardous materials that may affect human health and the environment. Proper management and disposal of hazardous material is vital if it is found, disturbed, or generated during project construction.

Affected Environment

The study area with regards to hazardous materials is considered to be the properties within and adjacent to the proposed project footprint. Regulatory databases from the Water Board and the Department of Toxic Substances Control show that no known contaminated or hazardous materials sites, such as storage tank sites, are within range of affecting the project area. The lack of development in the project area, roadways notwithstanding, greatly limits the potential for contamination issues outside of lead. Caltrans conducted a preliminary site investigation (PSI) (December 2003) for which aerially deposited lead (ADL) was the only hazardous material identified that presents a risk to the environment. ADL has been detected in the soil within the proposed project area. A summary of the existing conditions identified in the PSI are discussed in this section. The PSI is available for review upon request (Contact Stefan Galvez, Office Chief of Environmental Analysis at Stefan.Galvez@dot.ca.gov).

ADL is known to exist in surface soils adjacent to the edge of pavement within the SR 29 and SR 221 corridor due to the historic use of leaded gasoline. Until the 1980s in the U.S., lead was commonly added to gasoline. As a result, lead was emitted as a component of motor vehicle exhaust. Soil sampling along many roadways has found that concentrations of lead exceed applicable thresholds for classification as a hazardous waste material. This phenomenon known as “aerially deposited lead” is widespread. Because the freeways in the proposed project area were built prior to the phase-out of lead as a gasoline additive, elevated concentrations of lead are likely to be present in the soil along the freeway.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: HM-1: During construction, workers could be exposed to ADL due to disturbance of the surface soil adjacent to the roadway. If not managed properly, this lead-contaminated material could become airborne and then inhaled or disposed of in an uncontrolled area that would then present a new exposure pathway.

A limited, preliminary site investigation to assess lead concentrations in the project footprint was completed in 2003. The results of the investigation did find increased lead concentrations in the ground surface samples relative to deeper samples, 2.5 feet to 10 feet deep. This phenomenon is likely due to aerially deposited lead, save for two anomalous, higher ground surface values. The reported ground surface concentrations were not as high as lead concentrations typically found alongside roadways that had greater traffic volumes during the period of leaded fuel use, such as freeways. In fact, the statistical profile of the ground surface lead concentrations indicates that the soil would not be classified as a hazardous waste if disposed of.

The lead concentrations reported in below-surface samples were largely consistent with background lead concentrations.

***No Build Alternative*:** As construction would not occur under the No Build Alternative, ADL would not be disturbed and no impacts would be anticipated.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: HM-1: As part of project development, a more extensive soil investigation will be conducted to determine to what extent ADL has affected soils that would be excavated as part of the proposed project. The investigation scope will be based on the project plans that likely represent the final project details. This investigation will include screening for additional metals and some organic compounds, such as fuel hydrocarbons and pesticides, to confirm, or refute, the supposition that there are no contamination issues related to them. The investigation for ADL will be performed in accordance with the Caltrans Lead Testing Guidance Procedure. The analytical results would be compared against applicable hazardous waste criteria. Based on analytical results, the investigation would provide recommendations regarding management and disposal of affected soils in the project area, including the reuse potential of ADL-affected soil during project construction. The provisions of a variance granted to Caltrans by the California Department of Toxic Substances Control (DTSC) in July 2009 (or any subsequent variance in effect when the project is constructed) regarding ADL-affected hazardous waste soil would be followed. The variance allows for lead-contaminated soil that has state-defined hazardous waste characteristics due to its lead content to be reused under specific engineering controls rather than disposed of in a landfill. Also, the soil must be excavated from and reused within state highway right of way, and the lead contamination must be the result of past leaded-fuel vehicle emissions. The mandated engineering controls to be in place when the variance is utilized include a surface cover of pavement or at least one foot of clean soil, soil reuse placement at least five feet above the typical highest water table for the site, limits on the solubility of the lead contamination, and limits on the acidic nature of the site soils. Construction plans that include utilization

of the variance are subject to review by the Department of Toxic Substances Control and the Regional Water Quality Control Board.

Regardless of the range of lead concentrations found in the project area, the construction contractor will be required to utilize a certified industrial hygienist-approved lead compliance plan to disclose the presence of lead-impacted soil and to provide measures and practices for minimizing worker exposure.

No Build Alternative: No avoidance, minimization, and/or mitigation measures are proposed.

2.2.6 AIR QUALITY

The following section is based upon the Air Quality Impact Report for the SR 29/221 Soscol Junction Project in Napa County, May 2014. This report is available upon request (Contact Stefan Galvez of the Office of Environmental Analysis at Stefan.Galvez@dot.ca.gov).

Regulatory Setting

The Federal Clean Air Act (FCAA), as amended, is the primary federal law that governs air quality while the California Clean Air Act is its companion state law. These laws, and related regulations by the United States Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB), set standards for the concentration of pollutants in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). NAAQS and state ambient air quality standards have been established for six transportation-related criteria pollutants that have been linked to potential health concerns: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), which is broken down for regulatory purposes into particles of 10 micrometers or smaller (PM_{10}) and particles of 2.5 micrometers and smaller ($PM_{2.5}$), and sulfur dioxide (SO_2). In addition, national and state standards exist for lead (Pb), and state standards exist for visibility reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride. The NAAQS and state standards are set at levels that protect public health with a margin of safety, and are subject to periodic review and revision. Both state and federal regulatory schemes also cover toxic air contaminants (air toxics); some criteria pollutants are also air toxics or may include certain air toxics in their general definition.

Federal air quality standards and regulations provide the basic scheme for project-level air quality analysis under the National Environmental Policy Act (NEPA). In addition to this environmental analysis, a parallel “Conformity” requirement under the FCAA also applies.

Conformity

The conformity requirement is based on Federal Clean Air Act Section 176(c), which prohibits the U.S. Department of Transportation (USDOT) and other federal agencies from funding, authorizing, or approving plans, programs or projects that do not conform to State Implementation Plan (SIP) for attaining the NAAQS. "Transportation Conformity" applies to highway and transit projects and takes place on two levels: the regional—or, planning and programming level—and the project level. The proposed project must conform at both levels to be approved.

Conformity requirements apply only in nonattainment and "maintenance" (former nonattainment) areas for the NAAQS, and only for the specific NAAQS that are or were violated. U.S. EPA regulations at 40 Code of Federal Regulations (CFR) 93 govern the conformity process. Conformity requirements do not apply in unclassifiable/attainment areas for NAAQS and do not apply at all for state standards regardless of the status of the area.

Regional conformity is concerned with how well the regional transportation system supports plans for attaining the NAAQS for carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM_{10} and $PM_{2.5}$), and in some areas (although not in California), sulfur dioxide (SO_2). California has attainment or maintenance areas for all of these transportation-related "criteria pollutants" except SO_2, and also has a nonattainment area for lead (Pb); however, lead is not currently required by the FCAA to be covered in transportation conformity analysis. Regional conformity is based on emission analysis of Regional Transportation Plans (RTPs) and Federal Transportation Improvement Programs (FTIPs) that include all transportation projects planned for a region over a period of at least 20 years (for the RTP), and 4 years (for the FTIP). RTP and FTIP conformity uses travel demand and emission models to determine whether or not the implementation of those projects would conform to emission budgets or other tests at various analysis years showing that requirements of the Clean Air Act and the SIP are met. If the conformity analysis is successful, the Metropolitan Planning Organization (MPO), Federal Highway

Administration (FHWA), and Federal Transit Administration (FTA), make the determinations that the RTP and FTIP are in conformity with the SIP for achieving the goals of the Clean Air Act. Otherwise, the projects in the RTP and/or FTIP must be modified until conformity is attained. If the design concept, scope, and "open-to-traffic" schedule of a proposed transportation project are the same as described in the RTP and the TIP, then the proposed project meets regional conformity requirements for purposes of project-level analysis.

Conformity analysis at the project-level includes verification that the project is included in the regional conformity analysis and a "hot-spot" analysis if an area is "nonattainment" or "maintenance" for carbon monoxide (CO) and/or particulate matter (PM_{10} or $PM_{2.5}$). A region is "nonattainment" if one or more of the monitoring stations in the region measures a violation of the relevant standard and the U.S. EPA officially designates the area nonattainment. Areas that were previously designated as nonattainment areas but subsequently meet the standard may be officially designated to attainment by U.S. EPA, and are then 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 procedural and documentation standards for projects that require a "hot-spot" analysis. In general, projects must not cause the "hot-spot" related standard to be violated, and must not cause any increase in the number and severity of violations in nonattainment areas. 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.

Mobile Source Air Toxics (MSAT)

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA) of 1990, whereby Congress mandated that the U.S. Environmental Protection Agency (EPA) regulate 188 air toxics, also known as hazardous air pollutants. The EPA has assessed this expansive list in their latest rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal

Register, Vol. 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are listed in their Integrated Risk Information System (IRIS) (http://www.epa.gov/iris/). In addition, EPA identified seven compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers from their 1999 National Air Toxics Assessment (NATA) (http://www.epa.gov/ttn/atw/nata1999/). These are acrolein, benzene, 1,3-butidiene, diesel particulate matter plus diesel exhaust organic gases (diesel PM), formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority mobile source air toxics, the list is subject to change and may be adjusted in consideration of future EPA rules.

Affected Environment

The project is located in Napa County within the San Francisco Bay Area. The climate of the San Francisco Bay Area has mild, wet winters and relatively warm, dry summers. The major climate controls are the Pacific high-pressure over the eastern Pacific Ocean, the Pacific Ocean and the local topography. The formation of a high-pressure area over the Great Basin Region to the east also affects the meteorology of the Bay Area, primarily during the winter months. Daytime temperatures in the summer average near 80 degrees Fahrenheit (ºF), with temperatures dropping into the 50's by morning. Sunshine is plentiful in the summer, with clear skies most of the time. In winter, temperatures vary little, with high temperatures in the mid 50's. Winter lows drop to the low 30's.

Air quality in the project area changes mainly due to two factors: vehicle emissions and meteorological conditions. The meteorological conditions such as mixing height, atmospheric stability, and wind speed all affect the atmosphere's or environment's ability to mix or dilute pollutants. Sunlight affects photochemical oxidant production. Atmospheric conditions are typically the cause of short-term variations in air quality while pollutant emission rates typically cause the long-term variations.

The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. However, the Bay Area as a whole

does not meet State or Federal ambient air quality standards for ground level O_3 and $PM_{2.5}$ and State standards for PM_{10}. For all other pollutants, the area complies with Federal and State air quality standards.

The Bay Area Air Quality Management District (BAAQMD) is the agency primarily responsible for ensuring that the national and state ambient air quality standards are attained in the San Francisco Bay Area. Its jurisdiction encompasses the seven Bay Area counties: Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa; as well as portions of two others: southwestern Solano and southern Sonoma.

Table 2-11 Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards						
Pollutant	**Averaging Time**	**California Standards [1]**		**National Standards [2]**		
		Concentration [3]	**Method [4]**	**Primary [3,5]**	**Secondary [3,6]**	**Method [7]**
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	—	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM10)[8]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		—		
Fine Particulate Matter (PM2.5)[8]	24 Hour	—	—	35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m^3)	—	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	—	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemiluminescence	100 ppb (188 µg/m^3)	—	Gas Phase Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	—	Ultraviolet Flourescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	—	
	Annual Arithmetic Mean	—		0.030 ppm (for certain areas)[10]	—	
Lead[11,12]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	High Volume Sampler and Atomic Absorption
	Calendar Quarter	—		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	—		0.15 µg/m^3		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	**No National Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

MSAT

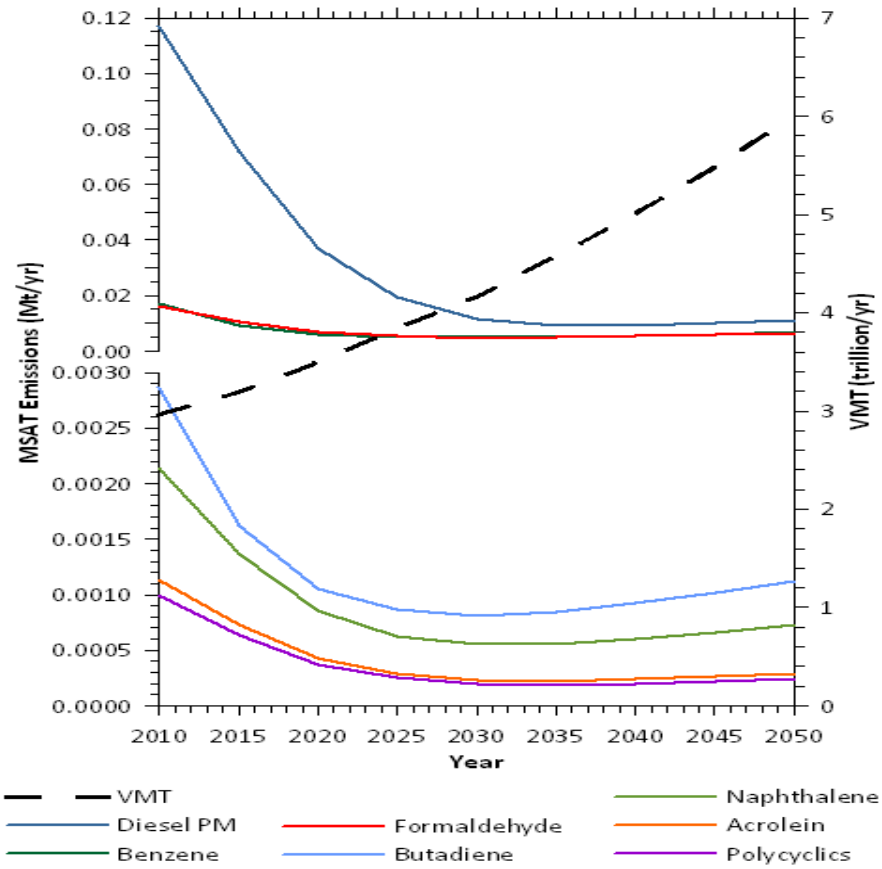
The 2007 EPA rule mentioned above requires controls that would dramatically decrease MSAT emissions through cleaner fuels and cleaner engines. According to an FHWA analysis using EPA's MOBILE6.2 model, even if vehicle activity (vehicle-miles travelled, VMT) increases by 145 percent as assumed, a combined reduction of 72 percent in the total annual emission rate for the priority MSAT is projected from 1999 to 2050. Emissions model MOBILE6.2, an emission factor model for predicting gram per mile emissions of Hydrocarbons (HC), Carbon Monoxide (CO), Nitrogen Oxides ($NO_{x)}$, Carbon Dioxide (CO_2), Particulate Matter (PM), and toxics from cars, trucks, and motorcycles under various conditions, has been replaced by the Motor Vehicle Emission Simulator (MOVES2010b) as EPA's official model for estimating emissions from cars, trucks and motorcycles.

According to EPA, using the MOVES2010b[8] model improves upon the previous MOBILE model in several key aspects: MOVES2010b is based on a vast amount of in-use vehicle data collected and analyzed since the latest release of MOBILE6.2, including millions of emissions measurements from light-duty vehicles. Analysis of this data enhanced EPA's understanding of how mobile sources contribute to emissions inventories and the relative effectiveness of various control strategies. In addition, MOVES2010b accounts for the significant effects that vehicle speed and temperature have on PM emissions estimates, whereas MOBILE6.2 did not. MOVES2010b includes all air toxic pollutants in NATA that are emitted by mobile sources. EPA has incorporated more recent data into MOVES2010b to update and enhance the quality of MSAT emission estimates. These data reflect advanced emission control technology and modern fuels, plus additional data for older technology vehicles.

[8] Note: The MOVES model is not used in California. For California the EPA has approved the use of EMFAC for conformity purposes. Although, the MOVES model is not utilized, emissions trends in California are anticipated to be similar to those identified by the national model.

Based on an FHWA analysis using EPA's MOVES2010b model, even if vehicle-miles travelled (VMT) increases by 102 percent as assumed from 2010 to 2050, a combined reduction of 83 percent in the total annual emissions for the priority MSAT is projected for the same time period.

Figure 2-15 National MSAT Emission Trends 1999-2050 for Vehicles Operating on Roadways Using EPA's MOVES2010b Model



Trends for specific locations may be different, depending on locally derived information representing vehicle-miles travelled, vehicle speeds, vehicle mix, fuels, emission control programs, meteorology, and other factors (Source of Figure 2-15 is EPA MOVES2010b model runs conducted during May - June 2012 by FHWA).

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2:

Regional Air Quality Conformity

The current Regional Transportation Plan (RTP) for the Bay Area, is known as the Plan Bay Area. The 2013 Transportation Improvement Program (TIP) is the most current conforming TIP, which was adopted by MTC, along with the Plan Bay Area on July 18, 2013. The Federal Highway Administration issued its approval of the conformity determination for the 2013 TIP and the Plan Bay Area on August 12, 2013. The conformity finding means that the total motor vehicle emissions projected for the Plan Bay Area and 2013 TIP are within the emissions budgets established in the State Implementation Plan (SIP), and that transportation control measures are implemented in a timely fashion. The finding puts the nine-county region in conformity with the SIP and all transportation-related federal air quality requirements.

The funding for the technical studies for the proposed project was included in the Plan Bay Area (Project Reference No. 94073) and the 2013 TIP (ID# NAP090003) via TIP amendment 2013-04. The funding for the construction of the Soscol Junction Project will also be included in MTC's TIP Amendment prior to finalization of the environmental document. Once this is done the proposed project would have demonstrated regional and project level air quality conformity.

Project Level Analysis

Fine Particulate Matter (PM_{10} and $PM_{2.5}$)

Particulate Matters (PM_{10} and $PM_{2.5}$) refer to airborne particles that are less than 10 microns in diameter (PM_{10}) or less than 2.5 microns in diameter ($PM_{2.5}$). Transportation related particulate matters are both a regional and a project-level issue. The coarser particulate matters, PM_{10}, are typically formed by earth-based material that enter the air through a variety of actions including "entrainment" into the atmosphere by wind-blown dust. Particles from brake and

tire wear, from pavement wear, and from other vehicle degenerative processes also contribute to this PM size. However, the greatest contribution from this size category has "natural" rather than "man-made" origins. $PM_{2.5}$ are thought to be more a product of combustion sources. This material is believed to penetrate deeper into the lungs and remain lodged there rather than exhaled, causing negative impacts on health.

The San Francisco Bay Area is designated as nonattainment for the 24-hour $PM_{2.5}$ standard. Beginning December 14, 2010, certain projects are required to engage in interagency consultation and complete $PM_{2.5}$ hot-spot analysis as part of the project-level conformity determination process.

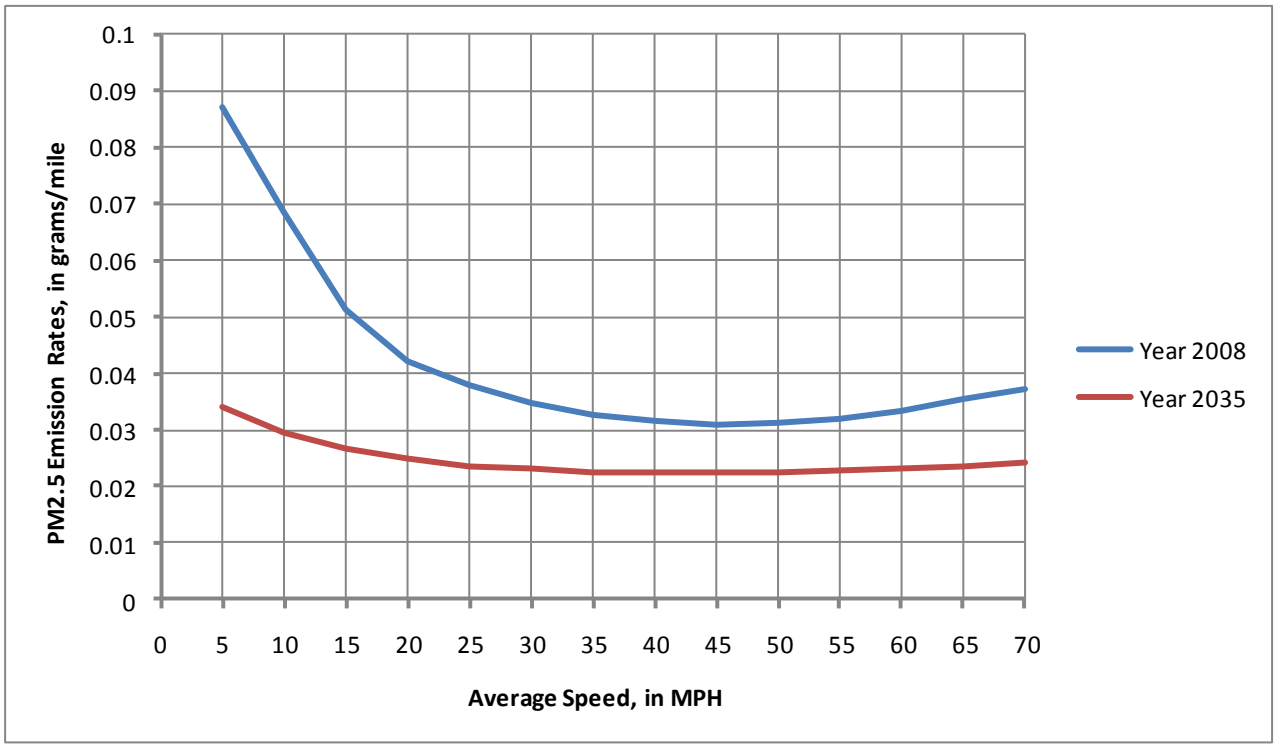
On July 28, 2011, Caltrans presented to the Bay Area Air Quality Conformity Task Force its assessment that the Soscol Junction Project is not a “project of air quality concern” as defined in the code of federal regulations 40 CFR 93.123(b)(1). The task force concurred with the Department’s findings. The concurrence is documented in the meeting notes and is included in the air quality impact report (see Appendix I). This consensus means that Clean Air Act and 40 CFR 93.116 requirements for PM2.5 have been met without an explicit hot-spot analysis.

A qualitative analysis was conducted to compare the estimated $PM_{2.5}$ emissions for the project’s 2008 baseline and 2039 design year conditions under various project alternatives, including the No-Build. The project was evaluated with and without the proposed Napa Pipe Project in place. Traffic data for the project’s 2008 and 2039 conditions were provided by Caltrans, District 4 staff members. Emission factors were generated using EMFAC2011-PL (Version 1.1), which was released by California Air Resources Board and approved by US EPA for project level assessments in California. The project’s design year analysis used the emission rates for year 2035, which is the furthest into the future the EMFAC2011-PL is capable of projecting. Although four years shy of the 2039 design year, they still represent the best information available for the analysis.

Based on the characteristics of the vehicle fleet specific to the region, the EMFAC2011-PL tool aggregates all vehicle types into either truck or non-truck categories. The truck category is comprised of vehicles in the Light-Heavy Duty Trucks (LHDT), Medium-Heavy Duty Trucks (MHDT) and Heavy-Heavy Duty Trucks (HHDT) classifications, with either diesel or gasoline engines. Using the data reported in 2008 Annual Average Daily Truck Traffic published by Caltrans for SR-29, the project area was determined to have 7.1% trucks vs. 92.9% non-trucks.

EMFAC2011-PL was used to generate emission rates for each of the three sources of $PM_{2.5}$ on moving vehicles: the running exhaust, brake wear, and tire wear, respectively. These rates were then combined into one set of composite emission rates with the project-specific truck/non-truck mix ratio factored in. Table 2-12 shows the project's composite $PM_{2.5}$ emission rates (in grams per mile) for years 2008 and 2035 with traffic speed ranging from 5 to 70 mph.

Table 2-12 PM2.5 Emission Rates vs. speed



With the implementation of emissions control regulations and new automobile technology, it is expected that the $PM_{2.5}$ contained in the running exhaust would be largely reduced in the future. The analysis indicates, from year 2008 to 2035, the $PM_{2.5}$ emissions would decrease considerably on a per vehicle-mile basis. While the amount of $PM_{2.5}$ in the running exhaust is dependant of the speed the vehicle, the amounts emitted in the brake and tire wear are constant at all speeds and remain relatively unchanged from year to year. Over time, as the running exhaust gets cleaner and becomes less of a factor in the overall $PM_{2.5}$ emissions, the proposed project's composite emission rates would become less dependent on vehicle speed. The analysis shows, in year 2035, the $PM_{2.5}$ emission rates vary in a relatively small range at different speeds.

The project level analysis shows the amount of $PM_{2.5}$ emissions within the project area in 2039 would decrease from the baseline level of 2008 under all project alternatives, including the No-Build. It demonstrates that the reduction in the emissions rates of $PM_{2.5}$ over time would more than compensate for the increase of

VMT in the design year, as shown in the table below. Either Options 1 or 2 of the Build Alternatives would produce less total $PM_{2.5}$ emissions when compared with the No-Build in the design year. While both Build Alternatives will significantly improve traffic operations at the Junction, they would only cause slight reductions in $PM_{2.5}$ emissions over the level for the No-Build, because the emission rates in the design year vary in a narrow range at different speeds.

Table 2-13 Project $PM_{2.5}$ Emissions pounds/day

Project $PM_{2.5}$ Emissions, in pounds/day			
Alternatives	2008	2019	2039
Existing	10.5	-	-
No-Build	-	7.6	9.0
Build - Alt 5 Opt 1	-	7.5	8.8
Build - Alt 5 Opt 2	-	7.5	8.8

Project level analysis indicates that the amounts of PM_{10} emissions within the project area in year 2019 would decrease from the baseline level under all project alternatives because PM_{10} emissions rates would be lowered from the baseline year. The growth of VMT, however, would raise the total PM_{10} emissions in year 2039 over the baseline level under all project alternatives.

Table 2-14 Project PM_{10} Emissions, pounds/day

Alternatives	PM_{10} Emissions, pounds/day		
	2008	2019	2039
Existing	19.3	-	-
No-Build	-	16.8	20.1
Build - Alt 5 Opt 1	-	16.7	19.9
Build - Alt 5 Opt 2	-	16.7	19.9

Carbon Monoxide

Carbon Monoxide (CO) is exclusively emitted by motor vehicles. This pollutant binds the oxygen-carrying protein in blood to hemoglobin, reducing the amount of oxygen reaching the heart and brain. Exposure to CO, even at low levels can endanger people with coronary artery disease. It can also cause headaches, fatigue, and low reflexes, even among healthy people.

Typical symptoms experienced by some people when levels of CO substantially exceed state and federal air quality standards, are headaches and dizziness.

Violations of the carbon monoxide standards usually occur in the winter, during periods of ground-based weather inversions (i.e., when warm air above traps a layer of cold air beneath, near ground level) with very low wind speed.

The data from the BAAQMD monitoring station in Napa, the nearest station to the project site, shows no violations of the federal and state CO standards in five years from 2008 to 2013, as shown in Table 2-15.

Table 2-15 2008-2013 Criteria Pollutant Violations

Napa Monitoring Station

Pollutant	Standard Exceedance	2008	2009	2010	2011	2012	2013
Ozone (1 hour)	Maximum 1-hr concentration (ppm)	0.107	0.100	.106	0.083	0.082	.089
	Days > 0.09 ppm (Federal 1-hr standard revoked June 2005)	0	0		0	0	0
	Days > 0.09 ppm (State 1-hr standard)	1	1		0	0	0
Ozone (8 hour)	Maximum 8-hr concentration (ppm)	0.077	0.077	.089	0.069	0.064	.076
	Days > 0.075 ppm (Federal 8-hr standard)	2	1		0	0	1
	Days > 0.07 ppm (State 8-hr standard)	2	3		0	0	1
Carbon Monoxide	Maximum 8-hr concentration (ppm)	1.84	1.39	37	1.80	1.48	---
	Days > 9 ppm (Federal 8-hr standard)	0	0		0	0	---
	Days > 9.0 ppm (State 8-hr standard)	0	0		0	0	---
Nitrogen Dioxide	Maximum 1-hr concentration (ppm)	0.064	0.041	.056	0.045	0.050	0.043
	Days > 0.100 ppm (Federal 1-hr standard)	0	0		0	0	0
	Days > 0.18 ppm (State 1-hr standard)	0	0		0	0	0
PM2.5	Maximum 24-hr concentration (µg/m3)	---	---		---	24.2	35.8
	Days > 35 µg/m3 (Federal 24-hr standard)	---	---		---	0	1
PM10	Maximum 24-hr concentration (µg/m3)	47.4	51.7	6.1	54.4	36.3	37.6
	Days > 150 µg/m3 (Federal 24-hr standard)	0	0		0	0	0
	Days > 50 µg/m3 (State 24-hr standard)	0	1		1	0	0

"---" no data available
Source: California Air Resources Board.

The hot-spot analysis utilizes the "Transportation Project-Level Carbon Monoxide Protocol," dated December 1997, prepared by the Institute of Transportation Studies, University of California, Davis. This protocol was approved by the Metropolitan Transportation Commission (MTC) in Resolution No. 3075 on June 24, 1998. Use of this protocol was recommended by the Bay Area Interagency Conformity Task Force, which is the interagency consultation group established pursuant to EPA's conformity regulation and the Bay Area's conformity SIP.

Since the Bay Area was designated a maintenance area for the national 8-hour CO in April 1998, the protocol indicates that an analysis by comparison is appropriate for this project. This involves a comparison of the proposed facility with existing facilities within the Air District. A list of the features to be compared is given on pages 4-6 to 4-7 of the protocol. As shown in Table 2-16 below, conditions on SR 101 from Tully Road to Story Road in San Jose are used for comparison purposes. SR 101/Tully Road had no exceedance for year 2008. In addition, it was modeled for that year and it was verified that there were no local exceedance of any of the national ambient air quality standards.

Receptor locations are chosen where the highest CO concentrations seem most likely to occur and where sensitive receptors are located. Sensitive receptors refer to residences, parks, playgrounds, schools, hospitals, and retirement homes, where children, the elderly, and the acutely ill are likely to reside or spend a substantial amount of time (BAAQMD 1999).

Table 2-16 Comparison of Mainline Conditions

Parameters	SR-221/29 Soscol Junction Project Alt.5 Opt 1 & 2 w/o Napa Pipe	SR-221/29 Soscol Junction Project Alt.5 Opt 1 & 2 w/ Napa Pipe	SR-101 San Jose Tully to Story Rd (Existing)
A Receptor Distance	280 ft	280 ft	20 ft
B Roadway Geometry	2 lanes	2 lanes	8 lanes
C Worst case Meteorology	Coastal Valley	Coastal Valley	Coastal Valley
D ADT Volumes	SR-29 52,000 (2019) 62,000 (2039) SR-221 40,000 (2019) 49,000 (2039)	SR-29 52,500 (2019) 63,000 (2039) SR-221 41,000 (2019) 51,000 (2039)	224,000 (2008)
E Hot/Cold Starts	10/50 NB 10/50 SB	10/50 NB 10/50 SB	10/50 NB 10/50 SB
F Percent HDG trucks	2.0 % (2008)	2.0 % (2008)	2.2% (2008)
G 8 Hr. Background CO	2.2 ppm (2006-2008)	2.2 ppm (2006-2008)	2.7 ppm (2006-2008)

The ADT (average daily traffic) for SR 101 between Tully Road and Story Road represent current traffic volumes as expressed in the Caltrans publications “2008 Traffic Volumes on the California State Highway) and “2008 Annual Average Daily Truck Traffic on California State Highway System.” Since all of the above conditions are satisfied, there is no reason to expect higher CO concentrations at the project location from the mainline traffic. Although nearby intersections would experience traffic volume increases as a function of this project and anticipated growth in the area, volumes would be below similar intersections in the Bay Area, and therefore would not cause exceedance of state or federal CO standards.

The Soscol Junction Project would result in a facility that will be smaller and less congested than comparable facilities within the same Air District (SR-101 from Tully Road to Story Road). Since the comparable facilities are in an area that meets air quality standards (maintenance area), the proposed project would also meet micro

scale air quality requirements and, therefore would not have a substantial impact on air quality or cause exceedance of state or federal CO standards.

Ozone

Ozone is an indirect pollutant. Ozone precursors are converted into ozone by photochemical reactions some distance downwind, over several hours. It is therefore impossible for most transportation projects to create a localized ozone "hot spot." The traffic on a highway contributes to the regional ozone precursor emissions, and analysis of such emissions and their impact is normally done for regional planning. If a project can be shown, through a regional conformity analysis, that the RTP and TIP it belongs to contribute to annual emission reductions, then its individual impact on ozone should not be an issue. The region's motor vehicle emissions budgets for ozone precursors were developed as part of the 2001 1-hour Ozone Attainment Plan for the Bay Area and were approved by EPA.

Future Project Build and No-Build Emissions vs Baseline Emissions

Quantitative analyses were conducted to estimate the amounts of two ozone precursors, Reactive Organic Gases (ROG) and Nitrogen Oxides (NOx), emitted in the project area for the baseline year of 2008, as well as the 2019 opening year and the 2039 design year conditions under various project alternatives, either with or without the proposed Napa Pipe development in place. Traffic data for the proposed project's existing and future conditions were provided by Caltrans, District 4 staff members. Emission rates were calculated by using the computer model CT-EMFAC 5 which was released by Caltrans for project-level assessments in California. The 2039 design year analysis used the emission rates generated by CT-EMFAC 5 for year 2035, which is the furthest into the future the model is capable of projecting. Although four years shy of the 2039 design year, the data still represent the best information available for the analysis.

Table 2-17 below shows the estimated total daily ROG emissions within the project area under various scenarios.

Table 2-17- Total Project ROG Emissions

Alternatives	ROG Emissions, pounds/day		
	2008	2019	2039
Existing	98.1	-	-
No-Build	-	38.0	32.2
Build - Alt 5 Opt 1	-	36.6	29.2
Build - Alt 5 Opt 2	-	36.3	29.2

Table 2-18 shows the estimated total daily NOx emissions within the project area under various scenarios.

Table 2-18 - Total Project NOx Emissions

Alternatives	NOx Emissions, pounds/day		
	2008	2019	2039
Existing	322.6	-	-
No-Build	-	134.5	73.4
Build - Alt 5 Opt 1	-	130.1	68.5
Build - Alt 5 Opt 2	-	133.8	68.6

The analyses show, even with the increase in VMT, the amounts of ROG and NOx emitted within the project area in both years 2019 and 2039 would decrease significantly from the baseline level of 2008 under all project alternatives, including the No-Build.

Nitrogen Dioxides

While the NAAQS covers this entire group of NOx, NO_2 is the component of greatest interest and the indicator for the larger group of nitrogen oxides. NO_2 forms quickly from emissions from cars, trucks and buses, power plants, and off-

road equipment. In addition to contributing to the formation of ground-level ozone, and fine particle pollution, NO_2 is linked with a number of adverse effects on the respiratory system.

On January 22, 2010, US EPA established a new 1-hour NO_2 standard in the NAAQS at the level of 100 parts per billion (ppb). EPA expects to designate areas as attaining or not attaining the new standard by January 2012, within two years of establishing the new NO_2 standard. There is no approved regulatory model for roadway-related NO_2 hot-spot analysis at this time.

Mobile Source Air Toxics (MSATs)

Air toxics analysis is a continuing area of research. While much work has been done to assess the overall health risk of air toxics, many questions remain unanswered. In particular, the tools and techniques for assessing project-specific health outcomes as a result of lifetime MSAT exposure remain limited. These limitations impede the ability to evaluate how potential public health risks posed by MSAT exposure should be factored into project-level decision-making within the context of NEPA.

Nonetheless, air toxics concerns continue to be raised on highway projects during the NEPA process. Even as the science emerges, Caltrans is expected by the public and other agencies to address MSAT impacts in our environmental documents. The FHWA, EPA, the Health Effects Institute, and others have funded and conducted research studies to try to more clearly define potential risks from MSAT emissions associated with highway projects. The FHWA will continue to monitor the developing research in this field.

In September 2009, FHWA issued an “Interim Guidance on Air Toxics Analysis in NEPA Documents” advising on when and how to analyze MSAT for highway projects. Subsequently, an “Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA” was issued on December 6, 2012. The following analysis was done in conformance with the guidance and the subsequent updates.

FHWA has identified three levels of analysis for analyzing MSAT, depending on the specific project circumstances:

Category 1: No analysis for projects with no meaningful potential MSAT effects or exempt projects;
Category 2: Qualitative analysis for projects with low potential MSAT effects; or
Category 3: Quantitative analysis to differentiate alternatives for projects with higher potential MSAT effects.

The proposed project is considered a Category 2 project with low potential MSAT effects, because it serves to improve operations of the highway and alleviate congestion without adding substantial new capacity. A qualitative analysis is appropriate for this case. This analysis addresses effects on MSAT emissions under the Build and No-Build alternatives of the proposed project.

For each alternative in this EIR/EA, Alternative 5 Option 1 and Alternative 5 Option 2, the amount of MSAT emitted would be proportional to the vehicle miles traveled, or VMT, assuming that other variables such as fleet mix are the same for each alternative. Because the VMT estimated for the No Build Alternative is the same for all of the Build Alternatives, higher levels of MSAT are not expected from any of the Build Alternatives compared to the No Build. In addition, because the estimated VMT under each of the Build Alternatives are predicted to be the same, it is expected there would be no difference in overall MSAT emissions among the various alternatives.

Regardless of the alternative chosen, emissions would likely be lower than present levels in the design year as a result of EPA's national control programs that are projected to reduce annual MSAT emissions by over 80 percent from 2010 to 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth)

that MSAT emissions in the study area are likely to be lower in the future in virtually all locations.

Under each alternative there may be localized areas where VMT would increase, and other areas where VMT would decrease. Therefore, it is possible that localized increases and decreases in MSAT emissions may occur. The localized increases in MSAT emissions would likely be most pronounced along the new roadway sections that would be built for the new connectors. However, for both build alternatives, the new connectors are far from residences. Even if these increases do occur, they too would be substantially reduced in the future due to implementation of EPA's vehicle and fuel regulations.

In sum, under all Build Alternatives in the design year it is expected there would be reduced MSAT emissions in the immediate area of the proposed project, relative to the No Build Alternative, due to the reduced emissions associated with the improved intersection operation, and due to EPA's MSAT reduction programs.

Climate Change

Climate change is analyzed in Chapter 3. Neither the United States Environmental Protection Agency (U.S. EPA) nor Federal Highway Administration (FHWA) has issued explicit guidance or methods to conduct project-level greenhouse gas analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will aid decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project-level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

Because there have been more requirements set forth in California legislation and executive orders on climate change, the issue is addressed in a separate California Environmental Quality Act (CEQA) discussion in Chapter 3 and may be used to inform the National Environmental Policy Act (NEPA) decision. The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the State has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and reduction in the growth of vehicle hours travelled.

Construction (Short-term Impacts)

Alternative 5, Option 1 & Alternative 5, Option 2:

AQ-1: Air Quality Effects During *Construction*

The proposed project would generate air pollutants during the construction period, which is expected to last a total of two years. During construction, short-term degradation of air quality may occur due to the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and various other activities related to construction. Emissions from construction equipment also are anticipated and would include carbon monoxide (CO), nitrogen oxides (NOx), volatile organic compounds (VOCs), directly-emitted particulate matter (PM_{10} and $PM_{2.5}$), and toxic air contaminants such as diesel exhaust particulate matter. Ozone is a regional pollutant that is derived from NOx and VOCs in the presence of sunlight and heat.

Site preparation and roadway construction typically involves clearing, cut-and-fill activities, grading, removing or improving existing roadways, building bridges, and paving roadway surfaces. Construction-related effects on air quality from most highway projects would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils to and from the site. These activities could temporarily generate enough PM_{10}, $PM_{2.5}$, and small amounts of CO, SO_2, NOx, and VOCs to be of concern. Sources of fugitive dust would include disturbed soils at the construction site and trucks carrying

uncovered loads of soils. Unless properly controlled, vehicles leaving the site could deposit mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

In addition to dust-related PM_{10} emissions, heavy-duty trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NOx, VOCs and some soot particulate (PM_{10} and $PM_{2.5}$) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

SO_2 is generated by oxidation during combustion of organic sulfur compounds contained in diesel fuel. Off-road diesel fuel meeting Federal standards can contain up to 5,000 parts per million (ppm) or more of sulfur, whereas on-road diesel is restricted to less than 15 ppm of sulfur. However, under California law and ARB regulations, off-road diesel fuel used in California must meet the same sulfur and other standards as on-road diesel fuel (not more than 15 ppm), so SO_2-related issues due to diesel exhaust would be minimal. Some phases of construction, particularly asphalt paving, would result in short-term odors in the immediate area of each paving site(s). Such odors would be quickly dispersed below detectable thresholds as distance from the site(s) increases.

The impacts from the above activities would vary from day to day as construction progresses. The EPA considers construction impacts to be temporary and unavoidable. Caltrans Standard Specifications and Special Provisions for construction contracts include dust control measures.

Section 51.454 (g) of the Clean Air Act Amendments states that carbon monoxide and PM10 hot spot analyses are not required to consider construction-related activities that cause temporary increases in emissions. Each site, which is affected by construction related activities, shall be considered separately, using established "Guideline" methods. Temporary increases are defined as those that occur only during the construction phase and last five years or less at any individual site.

The Caltrans Special Provisions and Standard Specifications would include requirements to minimize or eliminate dust through the application of water or dust palliatives.

No Build Alternative: No construction impacts would occur with the No Build Alternative.

Naturally Occurring Asbestos

A review of the geologic maps focusing on naturally occurring asbestos formations was conducted for the proposed project. The type of geologic formations, found in the project area, would not be expected to contain naturally occurring asbestos. Therefore, issues related to naturally occurring asbestos are not anticipated for the proposed project.

Construction Conformity

Construction activities will not last for more than 5 years at one general location, so construction-related emissions do not need to be included in regional and project-level conformity analysis (40 CFR 93.123(c)(5)).

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2:

AQ-1: *Construction*

Most of the construction impacts to air quality are short-term in duration (approximately two years) and, therefore, would not result in long-term adverse

conditions. Implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control would reduce air quality impacts resulting from construction activities:

- The construction contractor would comply with Caltrans' Standard Specifications in Section 14 (2010).
    - Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances.
    - Section 14-9.03 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.

In addition, to the extent feasible, the following practices would be followed (Source: Bay Area Air Quality Management District CEQA Air Quality Guidelines 2012):

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California

Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
-

In addition, the following best management practices (BMPs) may be used:

- Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right of way line depending on local regulations.

- Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas.

- Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions.

- Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of Regulations Title 17, Section 93114.

- Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities.

- Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.

- Establish Environmentally Sensitive Areas (ESAs) or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited, to the extent feasible.

- Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic.

- Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation.

- Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter.

- Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads.

- Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.

No Build Alternative: There would be no construction avoidance and minimization and/or mitigation measures under the No Build Alternative.

2.2.7 NOISE

Regulatory Setting

The National Environmental Policy Act (NEPA) of 1969 and the California Environmental Quality Act (CEQA) provide the broad basis for analyzing and abating highway traffic noise effects. The intent of these laws is to promote the general welfare and to foster a healthy environment. The requirements for noise analysis and consideration of noise abatement and/or mitigation, however, differ between NEPA and CEQA.

California Environmental Quality Act

CEQA requires a strictly baseline versus build analysis to assess whether a proposed project would have a noise impact. If a proposed project is determined to have a significant noise impact under CEQA, then CEQA dictates that mitigation measures must be incorporated into the project unless such measures are not feasible. The rest of this section would focus on the NEPA 23 CFR 772 noise analysis.

National Environmental Policy Act and 23 CFR 772

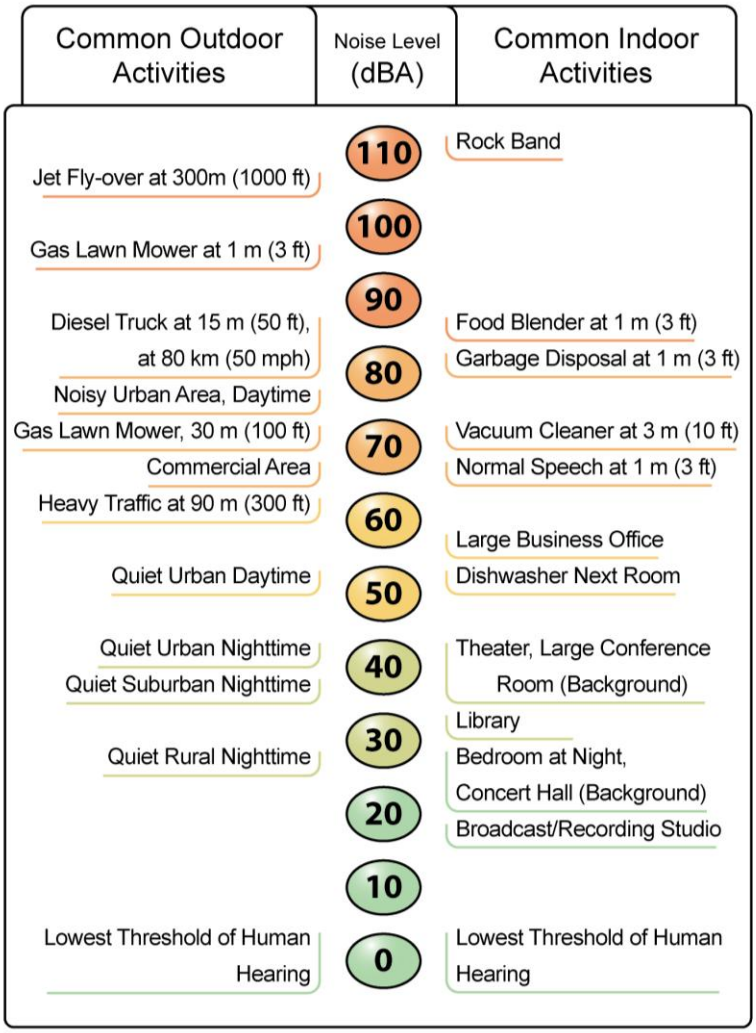
For highway transportation projects with FHWA (and the Caltrans, as assigned) involvement, the Federal-Aid Highway Act of 1970 and the associated implementing regulations (23 CFR 772) govern the analysis and abatement of traffic noise impacts. The regulations require that potential noise impacts in areas of frequent human use be identified during the planning and design of a highway project. The regulations contain noise abatement criteria (NAC) that are used to determine when a noise impact would occur. The NAC differ depending on the type of land use under analysis. For example, the NAC for residences (67 dBA) is lower than the NAC for commercial areas (72 dBA). (Note: Sound levels are expressed in *A-weighted decibels*, or dBA, which are units that are weighted to correspond to the frequencies that are detectable to the human ear.) The following table lists the noise abatement criteria for use in the NEPA-23 CFR 772 analysis.

Table 2-19 Noise Abatement Criteria of the FHWA

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

Figure 2-16 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.

Figure 2-16 Noise Levels Associated with Common Activities



In accordance with the Caltrans *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects, August 2006*, a noise impact occurs when the future noise level with the project results in a substantial increase in noise level (defined as a 12 dBA or more increase) or when the future noise level with the project approaches or exceeds the NAC. Approaching the NAC is defined as coming within 1 dBA of the NAC.

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

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

Affected Environment

The information in this section is based on a technical Noise Assessment created in February 2006 and amended in June 2010 and available upon request (Contact Stefan Galvez of the Office of Environmental Analysis at Stefan.Galvez@dot.ca.gov).

The proposed project goes through a largely undeveloped area with mixed land use (commercial and industrial). The nearest 'sensitive receptor' is a group of residences, the closest of which is on Devlin Road, approximately 280 feet away from the proposed flyover. The existing worst hourly noise level at this sensitive receptor is 60 dBA, which is 7 dBA below the NAC.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: The measured noise level at the nearest sensitive receptor was 60 dBA Leq(h). In addition a screening analysis was used from the Caltrans Technical Noise Supplement, which is allowable under the 2006 Traffic Noise Analysis Protocol. The analysis determined that the proposed project would result in a noise level increase of no more than 2.4 dBA Leq(h). A difference in traffic noise of less than 3 dBA Leq (h) is undetectable to the human

ear. The proposed project passed all the criteria in the screening analysis procedures, therefore further analysis is not warranted.

N-1: *Temporary or Periodic Increase in Ambient Noise Levels*
Construction activities for the proposed project could result in noise levels greater than the existing noise levels. Since construction activities would move around the respective project areas as construction proceeds, it is unlikely that any one location would experience high noise levels continuously for extended periods of time.

Construction noise is unavoidable and could affect some nearby members of the public during daytime hours. However, the impact would be temporary and limited to the time of the construction in any one location.

No Build Alternative: There are no anticipated construction noise impacts from the No Build Alternative

Avoidance, Minimization and Abatement Measures

Alternative 5, Option 1 & Alternative 5, Option 2:

No permanent noise abatement, such as soundwalls, is required or recommended because the measured noise levels at the nearest sensitive receptor was 60 dBA, well below the federal noise abatement criteria of 67 dBA.

N-1: Caltrans Standard Specifications for construction contracts include the following noise abatement measures to minimize construction noise impacts:

- All construction equipment may be required to conform to the provisions in Section 14-8.02 of the latest edition of Standard Specifications to minimize noise from construction activities, such as maintaining equipment mufflers in proper operating order.

No Build Alternative: No noise abatement measures are proposed for the No Build Alternative.

2.2.8 ENERGY

Regulatory Setting

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires the identification of all potentially significant impacts to the environment, including energy impacts. The California Environmental Quality Act (CEQA) Guidelines, Appendix F, Energy Conservation, state that Environmental Impact Reports (EIR) 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.

Affected Environment

Transportation-related activities account for a significant portion of the fossil fuel/petroleum fuels used in California. Caltrans expects that transportation-related activities would continue to account for a substantial portion of the petroleum fuels used in California for many more years until there is a major transition to motor vehicles using advanced technologies and alternative fuels that minimize the impacts to the atmosphere and the environment. Until there is more advancement in the renewable energy sector in the future, fossil fuels must be used more efficiently and conservatively because of the environmental impacts of constructing, operating and maintaining transportation facilities as well as operating and maintaining motor vehicles. There are also political and environmental costs associated with promoting clean renewable energy.

Environmental Consequences

Direct Energy

Direct energy is the energy expended by motor vehicles. Direct energy expenditures are dependent on many factors that relate either to motor vehicles or to the facility and traffic operations over which the motor vehicles travel. In general, if the fleet and mix of motor vehicles are similar, direct energy expenditures would be higher for the facility with:

- Higher traffic volumes

- Greater length
- Slower speeds (in the range of 5 to 55 mph in urban settings, or 5 to 35 mph in rural settings)
- More congested flow conditions
- Poorer levels of service
- Greater delay and travel times
- Longer queues
- Steeper grades

Alternative 5, Option 1, Alternative 5, Option 2 and No Build Alternative:

In the proposed Soscol Junction Project, the Build alternatives are expected to result in less direct energy expenditures when compared to the No-Build alternative. The energy savings would result from improved traffic operations (level of service, speeds, and flow conditions).

Indirect Energy

Indirect energy is the energy that is expended during the construction, operation, and maintenance of the highway facility, and the manufacture, maintenance, and replacement of parts of the motor vehicles that use the highway facility. Construction energy expenditures would vary with the proposed type of construction and it is expected that there would be more energy expended from the construction of both Build alternatives than the No-Build.

Total Energy Expenditures

Total energy expenditures are the sum of direct and indirect energy. It is currently difficult to quantify future direct energy expenditures because: this is a period in which there are many innovations in the various types of alternative fuels for motor vehicle use; and the mix of vehicles on the roads may fluctuate substantially according to future economic and political trends. Also, motor vehicle fuel economy standards and efficiencies have become stagnant, particularly for American made vehicles, but would begin to increase again under new legislation passed by the U.

S. Congress in December 2001. Indirect energy expenditures are also difficult to quantify at this time because construction methodologies and equipment are evolving from the methodologies and equipment that were predominant in the 1960s and 1970s; consequently, construction energy factors for quantifying construction energy expenditures need to be updated.

Conclusion

Because the proposed project would reduce congestion and improve operations at the Soscol Junction, either of the Build Alternatives would likely result in less direct energy expenditures in comparison to the No-Build Alternative.

Opportunities for the contractor to adopt innovations during construction and for Caltrans to achieve greater efficiencies through maintenance and operational improvements at Soscol Junction would lead to a reduction in indirect energy expenditures.

Over the long term, reductions in direct energy expenditures through congestion relief and improved operations are greater than short-term indirect expenditures. Therefore the proposed project would not lead to adverse energy impacts.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2:

As stated above, the build alternatives would have the effect of increasing energy usage temporarily during construction when compared with the No-Build Alternative. Over the long term though, the reductions in direct energy expenditures through congestion relief, improved operations, and other transportation efficiencies would be greater than short-term indirect expenditures. Therefore no avoidance, minimization, and/or mitigation measures are proposed.

No Build Alternative:

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

2.3 BIOLOGICAL ENVIRONMENT

This section of the document is based on information provided in the Natural Environment Study (NES) (November 2013), which is available upon request (Contact Stefan Galvez of the Office of Environmental Analysis at Stefan.Galvez@dot.ca.gov). In the NES a Biological Study Area (BSA) was defined as follows:

The BSA boundaries varied by species and were dependent on the species' dispersal capabilities and habitat preferences. The largest BSA was for the California Red-Legged Frog (CRLF), which consisted of a 1-mile radius from the project construction area. This was considered to be a reasonable dispersal distance from which CRLF could potentially gain access to the project area. BSAs for all other species consisted of the project footprint and surrounding right-of-way or specific habitat within this area where the species could potentially occur. For the wetlands, rare plants, and vernal pool branchiopods, the BSA covers approximately 170 acres (ac), comprising a "generalized" project BSA. For the Callippe Silverspot Butterfly (CSSB) and the Valley Elderberry Longhorn Beetle (VELB), focused host-plant surveys were conducted within this 170-ac BSA. For anadromous fish and California freshwater shrimp (CFWS), the BSA was restricted to Suscol Creek within the 170-ac BSA (Caltrans NES, November 2013).

2.3.1 NATURAL COMMUNITIES

Regulatory Setting

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

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

Affected Environment

The generalized biological study area (BSA) is located in the coastal range within the lower Napa River watershed in southern Napa County and spans 170.3 ac. Annual grassland dominates the study area situated on hilly to gradually sloping terrain; the highest elevation is approximately 185 feet. An unnamed ephemeral drainage, the north tributary to Sheehy Creek, and Suscol Creek drain the hillsides of the area surrounding the proposed project and flow into the Napa River.

The proposed project area consists of four broad plant habitat types: ruderal native and non-native annual grasslands, scattered oak woodland, seasonal wetland, and riparian woodland. The ruderal grasslands consist mainly of non-native herbaceous species and a few natives. The scattered few native oaks, remnants of historic oak woodland, occur adjacent to SR 221 and along an unnamed ephemeral stream at KP 0.35 (PM 0.22). Seasonal wetlands are found throughout the project site. Dominant plant species include cattails and Himalayan blackberry. The Suscol Creek riparian woodland is comprised of a variety of tree species, including California bay laurel, valley oak, alder, and willow.

According to the California Natural Diversity Database (CNDDB) list (Appendix G), there are three natural communities of special concern that may be present within the two United States Geographical Survey (USGS) quadrangles where the proposed project occurs (Cuttings Wharf and Napa). These communities are Coastal Brackish Marsh, Northern Coastal Salt Marsh, and Northern Vernal Pool natural communities. Coastal Brackish Marsh and Northern Coastal Salt Marsh communities are not present within the project BSA. Northern Vernal Pools is present at 2 locations east of SR 221 within the BSA.

According to the USFWS and NMFS, critical habitat for the following species occurs within the Cuttings Wharf and Napa quadrangles: vernal pool fairy shrimp, Central California coastal steelhead (CCCS), winter-run chinook salmon (*Oncorhynchus tshawytscha*), and Contra Costa goldfields (CCGF). Of these, critical habitat for CCCS and CCGF are found within the project BSA. The proposed project occurs within Essential Fish Habitat (EFH) for Chinook and coho salmon (*Oncorhynchus kisutch*). This EFH unit covers parts of Alameda, Contra Costa, Marin, Napa, San Francisco, Solano, and Sonoma Counties.

Land use along the proposed Soscol Junction Project is primarily agricultural. The area consists of annual grassland with areas of sparse and scattered oak woodland, and a few eucalyptus trees. A riparian corridor along Suscol Creek crosses the proposed project near the intersection of SR 221 and SR 29. Three unnamed ephemeral streams also flow through the project, eventually emptying into the Napa River. The specific plant habitat types detected in the BSA are explained below.

California Annual Grassland

California Annual Grassland is described as occurring over a wide range in California and varying greatly in species composition from site to site. Non-native grasses are typically dominant, but often there is an associated rich assemblage of native annuals and perennials. Small remnant stands of native grasses may occur occasionally.

Valley Needlegrass Grassland

Much of the native grassland in California has been altered by the introduction of non-native grasses and forbs but patches of native grass species are still widespread. Several small stands of native grass were encountered in the BSA. Two of these were large enough to warrant recording. One location just south of the Grape Crusher Statue covers approximately 42,000 ft^2. Another, located on the east side of SR 29 just south of Soscol Creek Road, covers approximately 16,000 ft^2. The dominant grass in this vegetation type is purple needlegrass.

Central Coast Live Oak Riparian Forest

Suscol Creek is a small spring-fed stream. The tree canopy along the creek is dense to broken and completely shades the streambed in places. This stream passes under the SR 12/29 interchange, under Devlin Road, and under Soscol Creek Road. Dominant species along Suscol Creek include California bay (*Umbellularia californica*) and white alder (*Alnus rhombifolia*). Associate species include coast live oak, valley oak, scarlet monkey flower (*Mimulus cardinalis*), and common nettle (*Urtica dioica*). This community has been severely invaded by Himalayan blackberry (*Rubus discolor*), displacing most of the cover of understory native shrubs.

Coast and Valley Freshwater Marsh

Coast and valley freshwater marsh is a vegetation type dominated by perennial hydrophytes and occasional small trees (*Salix spp.*). In the BSA, this vegetation type is limited to a small area along SR 29 near Devlin Road and SR 221 near Anderson Road, as well as on the uphill slope along the SR 12/29 interchange. Dominant species include brown-head rush (*Juncus phaeocephalus*), dallisgrass (*Paspalum dilitatum*), and cattail (*Typha spp.*). Associated species include prairie bulrush (*Scirpus maritimus*) and water plantain (*Alisma plantago-aquatica*). The source of the water to these wetlands is the seepage from small hillside springs. The wetlands appear to have been modified into roadside ditches.

Cismontane Alkali Marsh

Cismontane alkali marsh vegetation occurs in low open places through much of central California, often in association with tidal salt marshes and contained drainage basins that accumulate natural salts. Plants that typically dominate this vegetation type are termed halophytes, due to a tolerance to salt accumulation. In the BSA, this vegetation type is present adjacent to the Napa River, as well as in one confined area where a seasonal seep crosses under one lane of SR 29 and is temporarily trapped above Devlin Road. The confined area has marginal conditions modified by road engineering and only weakly resembles natural alkaline grasslands. Cismontane Alkali Marsh vegetation is described for this location because conditions

suggested a slight potential for special-status species to occur. Native species found here include salt grass (*Distichlis spicata*), seaside heliotrope (*Heliotropium curassavicum*), and alkali rye (*Leymus triticoides*).

Rivers and Creeks

Napa River, Sheehy Creek, and Suscol Creek are present within the CRLF BSA, whereas only Suscol Creek occurs in the BSAs for all other species. The Napa River is brackish and is present in the northeastern portion of the BSA. Cismontane alkali marsh is present on the banks of this river; however, the riverbed itself is unvegetated.

Suscol Creek is a freshwater creek. It is a semi-perennial watercourse (portions of the creek dry up late in the year) flowing under Devlin Road and SR 29. The creek corridor contains poison oak (*Toxicodendron diversilobum*), Himalayan blackberry, red alder (*Alnus rubra*), California bay laurel, red willow (*Salix laevigata*), arroyo willow (*S. lasiolepis*), valley oak, and coast live oak. Two Northern California black walnut trees (hybrids of English walnut [*Juglans regia*] and California walnut [*J. hindsii*]), apparently planted as judged by the small trunk diameters of 10 in and 16 in, are located near the southwest corner of the SR 12/221 intersection.

Along the edges of the unnamed ephemeral stream at PM 0.22, just west of SR 221, grows water starwort (*Callitriche* ssp.), common nut grass (*Cyperus eragrostis* var. *eragrostis*), common rush (*Juncus effuses*), and cattail. The banks of the tributary to Sheehy Creek located near the southern limits of the BSA contain a bramble of dense Himalayan blackberry, weeping willows (*Salix babylonica*) and a cultivated apple tree (*Malus spp.*). Manna grass (*Glyceria* ssp.), perennial ryegrass (*Lolium perenne*), curly dock (*Rumex crispus*), and rabbit foot grass (*Polypogon* ssp.) predominate in the wetlands adjacent to this stream.

Northern Claypan Vernal Pool

Northern claypan vernal pools are seasonal wetlands that occupy shallow basins or channels in clay soils in the Central Valley. These depressions hold water during the

rainy season because the clay substrate impedes water percolation. Pools may be as small as a few square meters or as large as several thousand square meters. Northern claypan vernal pools support a distinctive flora composed mainly of native annual forbs adapted to inundation in the rainy season and hot, desiccated conditions in the dry season. Many of the characteristic plants germinate underwater, and then grow to maturity, flower and set seed as the pools dry.

Northern claypan vernal pool vegetation occurs in two small vernal pools located near the eastern boundary of the BSA along the east side of SR 221 north of Suscol Creek. The combined acreage of these two vernal pools within the ROW is 0.082 ac. The habitat quality within these pools appears to be in decline, and these pools are largely dominated by non-native Italian rye grass. Associated nonnative species include curly dock and medusahead (*Taeniantherum caput-medusae*). Native species include Douglas' meadowfoam (*Limnanthes douglasii* ssp. *douglasii*) and stipitate popcorn flower (*Plagiobothrys stipitatus*).

These two vernal pools are within CCGF identified earlier Critical Habitat, meet the USFWS definition of suitable habitat for CCGF, and support CCGF.

Ruderal

Much of the roadside landscape has been routinely affected by disturbances such as traffic, mowing, grading, filling, and spraying or has been left abandoned or ungrazed. Such conditions tend to encourage invasive, non-native vegetation that outcompete native flora. In the BSA, these places are dominated by wild oats, Mediterranean mustard (*Hirschfeldia incana*), bishop weed (*Ammi majus*), wild radish, and common mustard (*Brassica rapa*). Roadside vegetation also consisted of slender wild oat (*Avena barbata*), sweet fennel (*Foeniculum vulagare*), yellow star thistle (*Centaurea solstitialis*), wild mustard (*Brassica* spp.), cut-leaved geranium (*Geranium disectum*), and Italian thistle. The dense cover is generally over 3 feet tall and excludes most native grasses and forbs. A few native species, such as slender tarweed (*Madia gracilis*) and wine-cup clarkia (*Clarkia purpurea)*, were found there.

Overall, the proposed project contains approximately 73 native and 53 nonnative plant species, though the non-natives predominate in quantity. The plateau of the grasslands adjacent to SRs 221/29 is composed of shallow rocky soils and rock outcrops containing a significant component of native species such as onion (*Allium* ssp.), common blennosperma (*Blennosperma nanum* var. *nanum)* and bitterroot (*Lewsia rediviva*). North (downhill) of this general area, Johnny-jump-up (*Viola pendunculata*) and milk thistle (*Silybum* ssp.) occur.

The trees within the project area consist of a mix of coast live oak, valley oak, and eucalyptus. In the upland setting, valley oak, California bay laurel, red willow, arroyo willow, alder species, coast live oak, and non-native plum (*Prunus* sp.) species occur in the Suscol Creek riparian corridor. There are approximately 76 trees over 7.6 cm (3 in) in diameter at breast height (dbh) in the project impact area. These trees range between 3 to 54 inches in dbh.

Riparian Habitat: An ephemeral stream crosses SR 221 at post mile 0.22. Riparian habitat is characterized as the interface between a stream and the land.

Environmental Consequences

See Table 2-20 for a summary of tree impacts. All tree impacts are limited to Caltrans Right of Way and will be minimized to the maximum extent practicable. At Suscol Creek, trees will only be trimmed and pruned if possible. Trimmed and pruned trees are included as impacts in Table 2-20.

Alternative 5, Option 1: B-1: The removal of vegetation to accommodate construction access would result in both temporary and permanent impacts throughout the proposed project area and the riparian environment. Trees within the riparian corridor would be trimmed or cut to ground level. To protect nesting birds, this would take place during the winter months, outside of the nesting season.

Construction would impact a total of 76 trees. Sixteen trees along the west side of SR 221, south of Napa Valley Corporate Way, would be impacted. Sixteen trees located within the proposed staging area north of Suscol Creek may be impacted.

Approximately 23 trees in the riparian corridor of Suscol Creek may be impacted by trimming, removal for falsework, or shading from the future flyover structure. One large eucalyptus (54 in dbh) in the area of the flyover ramp column will be removed. At the Sheehy tributary wetland area near the southwest end of the proposed project a total of 20 trees may be impacted by construction activities. See Table 2-20 for a summary of tree impacts.

There would be no permanent structures constructed within the riparian corridor of Suscol Creek. Falsework would be required to free-span over the creek during construction of the flyover superstructure. The average depth of footing excavation would be approximately 10 ft deep. The bridge height would be about 26 ft above SR 29 and the soffit height would be at about 23 ft.

Table 2-20 Tree Impacts, Build Alternative 5, Options 1 & 2

dbh → SPECIES ↓	3-5 in	6-10 in	11-15 in	16-20 in	21-25 in	26-30 in	31-35 in	36-40 in	41-45 in	46+ in	Totals Trees
Alder sp.						1					1
Apple			1								1
California Bay		3	1								4
Coast Live Oak	3	4	7	4		3	3	2	1		27
Eucalyptus sp.		1							1	1	3
Hemlock				1							1
Prunus sp.	1										1
Salix sp. (native)	2	4				1					7
Valley Oak		5	7	2		1	1				16
Walnut sp.		1		1							2
Weeping Willow	4	3	2	3			1				13
Total trees impacted	**10**	**21**	**18**	**11**	**0**	**6**	**5**	**2**	**2**	**1**	**76**
Native total	5	16	15	6	0	6	4	2	1	0	55
Non-Native total	5	5	3	5	0	0	1	0	1	1	21

NOTE: The diameter at breast height (dbh) of trees with multiple stems was determined by measuring the dbh's of all the main stems. The dbh's were then converted to areas of cross section of the individual stems. The areas were then added together as if they comprised one larger circle, and a dbh was determined for the total area. This new dbh was used to place the trees in a dbh size column. Non-native species include. apple, Eucalyptus, hemlock, *prunus*, walnut, and weeping willow.

The proposed project has the potential to temporarily impact approximately 0.23 ac of riparian habitat at Suscol Creek for both Options 1 and 2. Proposed flyover pier locations (permanent impacts) occur outside of the riparian zone. At the unnamed ephemeral stream crossing at SR 221 at post mile 0.22, a roadway over pass and culvert installation would permanently impact approximately .012 ac of riparian habitat. Approximately 0.04 ac of temporary impacts would occur.

Alternative 5, Option 2: B-1: Tree impacts from the construction of Alternative 5, Option 2 would be the same as Alternative 5, Option 1.

No Build Alternative: No trees would be removed under the No Build Alternative.

Avoidance, Minimization and/or Minimization Measures

***Alternative 5, Option 1*:** B-1: In an effort to avoid or minimize impacts to the existing trees, Caltrans would limit construction activities to the smallest area possible. A clear delineation of the construction area would be incorporated into the project plans and specifications. Fencing would be installed to protect environmentally sensitive areas and confine workers and equipment to designated construction zones.

In order to avoid as much impact to the trees in the Suscol Creek corridor as possible, the following falsework construction process would be implemented:

- Cast-in-drilled-hole piling foundations and columns would be constructed on each side of the upper channel. The bents (pile + column) would be constructed using an excavator and a crane located on the bank. The trees in the immediate 5-ft radius of the bents would be cut to stump level, or removed. Suscol Creek would not be dewatered.

- Impacts to the tree roots would be minimized by development of a pad composed of a temporarily placed suitable material that would protect the root systems. The pad would act as a buffer, more evenly dispersing the weight of the equipment over a greater surface area. This would reduce weight of the load directly over the root system, and thus minimize impacts to the trees. This pad would be removed once the work within the area is completed.

- ESA fencing would be placed adjacent to willow trees occurring along SR 29 next to the Sheehy Creek tributary.

Caltrans would mitigate 23 riparian trees at a 3:1 ratio on- or off-site and 53 non-riparian trees at a 1:1 ratio on- or off-site. If there is an instance where a tree removal is considered both a biological and visual resource impact, then the greater of the two replacement ratios would be implemented.

Caltrans would plant a total of 122 replacement trees. These trees would be planted away from highway impacts. Mitigation for riparian trees would be stated within the CDFW Lake and Streambed Alternation Agreement (California Fish and Game Code 1602) for the proposed project.

Caltrans would incorporate compensatory mitigation for oak woodlands pursuant to California Senate Concurrent Resolution 17 – Oak Woodlands.

Caltrans would establish mitigation during the permitting process with CDFW to compensate for impacts to riparian habitat.

Alternative 5, Option 2: The same avoidance, minimization, and/or mitigation measures are proposed as for Alternative 5, Option 1.

No Build Alternative: No avoidance, minimization and/or mitigation measures are proposed.

2.3.2 WETLANDS AND OTHER WATERS

Regulatory Setting

Wetlands and other waters are protected under a number of laws and regulations. At the federal level, the Federal Water Pollution Control Act, more commonly referred to as the Clean Water Act (CWA) (33 United States Code [USC] 1344), is the primary law regulating wetlands and surface waters. One purpose of the CWA is to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Waters of the U.S. 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 formed during 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 discharge of dredged or fill material cannot 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 administered by the U.S. Army Corps of Engineers (USACE) with oversight and enforcement by the U.S. Environmental Protection Agency (U.S. EPA).

Ordinarily, projects that do not meet the criteria for a Nationwide Permit may be permitted under one of USACE's Standard permits. There are two types of Standard permits: Individual permits and Letters of Permission. For Standard permits, the USACE decision to approve is based on compliance with U.S. EPA's Section 404(b)(1) Guidelines (U.S. EPA 40 Code of Federal Regulations [CFR] Part 230), and whether permit approval is in the public interest. The 404 (b)(1) Guidelines (Guidelines) were developed by the U.S. EPA in conjunction with the USACE, and allow the discharge of dredged or fill material into the aquatic system (waters of the U.S.) only if there is no practicable alternative which would have less adverse effects. The Guidelines state that the USACE may not issue a permit if there is a least environmentally damaging practicable alternative (LEDPA) to the proposed discharge that would have lesser effects on waters of the U.S., and not have any other significant adverse environmental consequences.

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

At the state level, wetlands and waters are regulated primarily by the State Water Resources Control Board (SWRCB), the Regional Water Quality Control Boards (RWQCB) and the CDFW. In certain circumstances, the Coastal Commission (or

Bay Conservation and Development Commission or the Tahoe Regional Planning Agency) may also be involved. Sections 1600-1607 of the California Fish and Game Code require any agency that proposes a project that would substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW 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 a Streambed Alteration Agreement obtained from the CDFW.

The RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. In compliance with Section 401 of the CWA, the RWQCBs also issue water quality certifications for activities which may result in a discharge to waters of the U.S. This is most frequently required in tandem with a Section 404 permit request. Please see the Water Quality Section 2.2.2 for more details.

Affected Environment

Wetland delineations were conducted throughout the project area by a Caltrans-contracted consultant and presented in the Natural Environment Study, November 2013 (available upon request). On June 5, 2013, Caltrans revalidated the March 12, 2008, wetland delineation by re-inspecting all delineated sites within the 2008 report. A jurisdictional determination will be submitted to USACE for approval prior to project approval.

Within or adjacent to the BSA, is a total of 1.30 ac of potentially jurisdictional waters of the U.S., including Suscol Creek, Sheehy Creek, and seven wetlands associated with depressional areas and roadside drainage features. In addition, a total of seven

ephemeral stormwater drainages and swales for a total of 0.55 ac were identified. These features are associated with culvert outfalls and roadside drainage areas and appear to convey highly ephemeral flows in response to heavy rainfall and subsequent runoff. However, none of these features met the USACE criteria required for wetlands (i.e. sufficient primary or secondary indicators for wetland hydrology, soils, and plants). A few features exhibited intermittent, well-defined erosion channels, but none were hydrologically connected to other waters of the U.S., including the Napa River. Appendix B within the NES displays the location of all wetland and non-wetland features.

Environmental Consequences

B-2, WW-1: Temporary and permanent impacts to wetlands would be avoided to the fullest extent possible, but some impacts would be unavoidable to successfully construct the proposed project and maintain safety standards in the highway design. Below Table 2-21 describes the impacts and mitigation resulting from the proposed project for Alternative 5, Option 1 and 2.

Table 2-21 Wetland and "Other Waters" Impacted and Proposed Mitigation

Permanent Direct Impacts				
	Option 1		**Option 2**	
Wetland Type	**Area Affected**	**Proposed Mitigation Area[1]**	**Area Affected**	**Proposed Mitigation Area[1]**
Waters	0.01 acre	0.01 acre	0.02 acre	0.02 acre
Wetlands	0.03 acre	0.03 acre	0.03 acre	0.03 acre
Temporary Direct Impacts				
	Option 1		**Option 2**	
Wetland Type	**Area Affected**	**Proposed Mitigation Area[2]**	**Area Affected**	**Proposed Mitigation Area[2]**
Waters	0.05 acre	0.05 acre	0.05 acre	0.05 acre
Wetlands	0.13 acre	0.13 acre	0.13 acre	0.13 acre

Notes:
[1] At 1:1 ratio off-site
[2] At 1:1 ratio on-site

Alternative 5, Option 1: The project would permanently impact 0.01 ac. of jurisdictional waters of the US. within Suscol and Sheehy Creeks. In addition, the project would permanently impact 0.03 ac of wetlands associated with depressional

and roadside drainages. Temporary impacts would be 0.05 ac. of jurisdictional waters within Suscol and Sheehy Creeks and 0.13 to depressional and roadside drainages that qualify as wetlands, None of the impacted wetlands are part of larger wetland complexes that may provide more complex ecological services.

Alternative 5, Option 2: Temporary impacts would be the same as those under Alternative 5, Option 1. The project would permanently impact 0.02 ac. of jurisdictional waters of the US. Associated with Suscol and Sheehy Creeks. In addition, the project would permanently impact 0.03 ac of wetlands associated with depressional and roadside drainages. None of the impacted wetlands are part of larger wetland complexes that may provide complex ecological services**.**

No Build Alternative: There would not be any impacts to Wetlands and other Waters of the US under the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1: B-1, B-2, WW-1: Replacement in acreage of wetlands that would be impacted by the Soscol Junction Project would be consistent with the USACE's Nationwide 'no net loss" policy. Caltrans would obtain the appropriate USACE 404 Nationwide Permit for impacts to the waters of the U.S., as impacts are below the 0.5 acre maximum threshold for USACE Nationwide 404 permit 14 (linear transportation projects). In addition, the Soscol Junction Project meets national and regional conditions prescribed in the 404 permit process. A 1602 Streambed Alteration Agreement from the CDFW would also be required prior to the end of the Plans, Specifications, and Estimates (PS&E) phase of the project. The preamble to this section, "Regulatory Setting," discusses these permits in detail. Temporary impacts areas would be reseeded and graded on-site to pre-project conditions at a 1:1 ratio.

Caltrans would also obtain a National Clean Water Act 401 certification from the state Regional Water Quality Control Board –San Francisco Bay (SFBRWQCB). Caltrans would incorporate SFBRWQCB permit requirements during the project's PS&E phase

Alternative 5, Option 2: B-1, B-2, WW-1: Avoidance, minimization and/or mitigation measures for wetlands and other waters of the U.S. would be the same under Alternative 5, Option 2 as for Alternative 5, Option 1.

No Build Alternative: No avoidance, minimization or compensation measures are proposed under the No Build Alternative.

2.3.3 PLANT SPECIES

Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) have 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 provided varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species section in this document for detailed information about these species.

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

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

Affected Environment

Caltrans biologists conducted plant surveys according to the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species.* Surveys did not find CDFW species of special concern, USFWS candidate species, and California Native Plant Society (CNPS) rare and endangered plants special status plant species.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: No impacts to non-federal or state-listed special status species are expected.

No Build Alternative: No impacts to non-federal or state-listed special status species are expected.

Avoidance, Minimzation and Compensation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: No avoidance, minimization, and/or compensation measures are proposed.

No Build Alternative: No avoidance, minimization, and/or compensation measures are proposed.

2.3.4 ANIMAL SPECIES

Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The U.S. Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA) Fisheries, and the California Department of Fish and Wildlife (CDFW) are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in the section below. All other special-status animal species are discussed here, including CDFW fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations relevant to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act
- Bald and Golden Eagle Protection Act

State laws and regulation pertaining to wildlife include the following:

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

Affected Environment

Nesting Birds

The Federal Migratory Bird Treaty Act (15 USC 703-711) 50 CFR Part 21 and 50 CFR Part 10, and the California Department of Fish and Wildlife Code Sections 3503, 3513, and 3800, protect migratory birds, their occupied nests, and their eggs from disturbance or destruction. "Migratory Bird" includes all non-game, wild birds found in the United States, except the house sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*) and rock dove (*Columba livia*).

Migratory, sensitive, and federal- and state-listed birds have the potential to occur within the project BSA. Golden eagle (*Aquila chrysaetos*) have been identified along SR 12 within a few miles of the existing project.

The golden eagle is federally protected by the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), and is a CDFW Fully Protected Species. Golden eagles forage over a wide area and primary prey include lagomorphs and rodents.

The Swainson's hawk is listed as threatened by the CDFW under CESA. They require large, open grasslands with suitable prey and suitable trees for nests. In California, Swainson's hawks typically forage over grassland or farmland habitat with a preference for alfalfa crops. Swainson's Hawks typically nest in tall trees within riparian areas or in groves or single large trees surrounded by suitable foraging habitat. In the California Central Valley, common nest trees include eucalyptus, walnut (*Juglans* spp,), oak, cottonwood (*Populus* spp.), and willow (*Salix* spp.). Swainson's hawks are migratory and typically occur within California from March to September. Swainson's hawks have been observed soaring over the BSA, although currently no active nests have been detected within the BSA. More information on Swainson's hawk is located in Section 2.3.5, Threatened and Endangered Species.

Other migratory and/or protected bird species such as white-tailed kite, ferruginous hawk (*Buteo regalis*) and American peregrine falcon (*Falco peregrinus anatum*) have a low probability of occurring within the project limits, though Nuttall's woodpecker (*Picoides nuttallii*) was found during a project site survey. No signs of burrowing owl (*Athene cunicularia*) or Western burrowing owl (*Athene cuniclularia hypugaea*) were found during several extensive surveys for other species on the project site; however, no focused surveys for these species were conducted.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2:

B-3 and B-4: *Nesting Birds*

Potential Swainson's hawk nesting habitat may be directly impacted by the removal or trimming of trees on the bank of Suscol Creek. These trees also may serve as perching sites. In addition, a negligible amount of golden eagle and Swainson's hawk grassland foraging habitat would be permanently or temporarily directly impacted by the proposed project.

Based on the small amount of vegetation disturbance relative to published territory sizes and the current lack of active nests within the BSA, it is expected that there

would be negligible or discountable impacts to Swainson's hawk and golden eagle foraging habitat or potential nesting habitat.

A raptor and general avian nest survey would be conducted at least one complete breeding season prior to construction to determine whether any birds, including special-status birds, are nesting within the project limits or vicinity. Potential mitigation for Swainson's hawk or golden eagle would be dependent on whether nesting activity occurs within or in the vicinity of the project limits. If nesting activity occurs, Caltrans would implement avoidance and minimization measures and consult with CDFW or USFWS to determine the best course of action.

Potential indirect effects to nesting birds may include construction noise and general construction activities (e.g., workers on foot, machinery movements and noise, nighttime work). Indirect effects are not anticipated with enforcement of the no-work buffers. If work is required within the buffers, Caltrans would consult with USFWS or CDFW prior to any work within the buffer.

No Build Alternative: Bird species would not be impacted under the No Build Alternative.

Avoidance, Mitigation and/or Minimization Measures

***Alternative 5, Option 1 & Alternative 5, Option* 2:**

B-3 and B-4: *Nesting Birds*

Migratory birds may try to nest on the ground, on structures, or in trees, shrubs or other vegetation within the project limits. A raptor and general avian nest survey will be conducted at least one complete breeding season prior to construction to determine whether any birds, including special-status birds, are nesting within the project limits or vicinity. A survey of active migratory bird nests would be conducted in potentially affected trees and shrubs just prior to the beginning of construction and during construction. CDFW would be notified of any occupied bird nests in impacted trees prior to their removal and Caltrans would work with CDFW to discuss relocation if necessary.

If construction is scheduled during the nesting season, which extends from February through August for most migratory birds in the San Francisco Bay Area, a Caltrans biologist would conduct pre-construction bird surveys before work begins. If the biologist determines that migratory birds are nesting within the zone of potential disturbance, then construction should be rescheduled to avoid the nesting season. If it is not possible to schedule construction to avoid nesting season, then the biologist, in consultation with the CDFW, shall determine the extent of a buffer zone (typically 50 to 300 ft from an occupied nest). Work is not allowed within the buffer zones, but work can proceed in all other areas.

Caltrans is currently exploring several options for avoidance and minimization. Potential efforts may include exclusionary fencing, use of sprinklers or high-pressure hoses to exclude nests, visual monitoring, and staging project work to avoid nesting birds. Once potentially active nests have been removed from the project limits outside of the nesting season, exclusionary devices may be installed to prevent any nesting birds from returning to their nests.

If possible, trees would be trimmed or cut to ground level between September 1 and February 15. Regardless, trees would be surveyed for nesting birds prior to trimming or cutting.

For active nests, no work would occur within 600 feet of Swainson's hawk nests, 300 feet of other raptor species, and within 50 feet of other species protected under the Migratory Bird Treaty Act and California Fish and Game Codes 3503, 3513, and 3800. Caltrans would consult with CDFW prior to any proposed work within these buffers. Should an active golden eagle nest occur within 0.5 mile of the project, Caltrans would consult with USFWS.

Potential mitigation for Swainson's hawk or golden eagle would be dependent on if nesting activity occurs within or in the vicinity of the project limits. If nesting activity occurs, Caltrans would consult with CDFW to determine the best course of action.

No Build Alternative: No avoidance, minimization or mitigation measures are proposed under the No Build Alternative.

2.3.5 THREATENED AND ENDANGERED SPECIES

Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This Act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this Act, federal agencies, such as the Federal Highway Administration (FHWA), are required to consult with the US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's 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 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence and/or documentation of a No Effect finding. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to

otherwise lawful development projects; for these actions an incidental take permit is issued by the CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (A) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (B) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

Affected Environment

The following federal special status plants and animals species were identified to be within the Cuttings Wharf Quadrant (a geographical boundary established by the U.S. Geological Survey). Due to lack of presence or habitat, Caltrans has determined that the project would have “no effect” (no effect is a federal determination used by USFWS) on some listed-species and, therefore, these species will not be discussed further (more information can be found in Appendix A of the NES):

- soft bird's beak (*Cordylanthus mollis ssp. mollis*),
- showy Indian clover (*Trifolium amoenum*),
- Conservancy fairy *shrimp (Branchinecta conservatio*),
- green sturgeon (*Acipenser medirostris),*
- tidewater goby (*Eucyclogobius newberryi*),
- delta smelt (*Hypomesus transpacificus*),
- coho salmon (*Oncorhunchus kisutch*),
- Central Valley steelhead (*Oncorhynchus mykiss*),
- Central Valley spring run Chinook salmon (*Oncorhynchus tshawytscha*),
- winter-run Chinook salmon (*Oncorhynchus tshawytscha*),,
- western snowy plover (*Charadrius alexandrinus nivosus*),
- California brown pelican (*Pelecanus occidentalis californicus*),
- California clapper rail (*Rallus longirostris obsoletus*),
- California least tern (*Sternula antillarum browni*),
- northern spotted owl (*Strix occidentalis caurina*), and
- Salt marsh harvest mouse (*Reithrodontomys raviventris*)

Threatened and endangered listed species with potential presence or habitat in the project area are discussed below:

- Contra Costa goldfields
- Callippe silverspot butterfly
- valley elderberry longhorn beetle
- central California coastal steelhead
- California freshwater shrimp
- vernal fairy shrimp
- Swainson's hawk
- California red-legged frog

Contra Costa goldfields

Contra Costa goldfields (*Lasthenia conjugens*) is federally listed as an endangered species (no State listing). It is a showy, spring annual herb. The blooming period is from March through June, depending on environmental conditions. CCGF grow in vernal pools, swales, and other depressions in open grassland and woodland communities.

There are currently 20 existent CCGF population occurrences, the largest concentration occurring in the Fairfield-Suisun area in Solano County. Few of these populations are protected. Loss of vernal pool communities through increasing development and drainage of wet areas are the greatest threats to CCGF. The nearest known CCGF population extends to within the project BSA and ROW from the Silverado Premium Parcels property east of SR 221 and the proposed project.

Portions of the proposed project are within CCGF Critical Habitat. The project boundary extends into USFWS designated Critical Habitat Unit 3, Napa River Unit. This Critical Habitat area is 534 ac. This Unit is ecologically important to the recovery of this species. Additionally, this locality may now represent one of the

northernmost populations of this species because the Mendocino population may no longer be extant.

The amount of Critical Habitat within the project BSA is 37.41 ac. This acreage total includes pavement and other permanent human-made structures located within the critical habitat. Only a small portion of this area contains wetlands with suitable Contra Costa goldfield habitat elements, as defined by the USFWS.

The amount of suitable CCGF habitat likely to be considered occupied by the USFWS within the BSA is approximately 0.082 ac. This is reflected in Table 2-22 below:

Table 2-22 Suitable CCGF Habitat in Acres

CCGF Feature	Acres
Contra Costa goldfields Vernal Pool 1	0.045
Contra Costa goldfields Vernal Pool 2	0.037
Total	0.082

Other seasonal wetlands (vernal pools) that are part of CCGF critical habitat are adjacent to the project area; however, these areas are outside the project BSA and were not surveyed.

Callippe silverspot Butterfly

Caltrans-contracted consultant Dr. Richard Arnold conducted a CSSB survey on June 23, 2005.

The Callippe silverspot is federally listed as endangered (no State listing). The butterfly occurs in coastal grasslands where its larval food plant, Johnny jump-up (Viola pedunculata), grows. Although it was formerly widely distributed throughout the San Francisco Bay area, the butterfly at the time of listing was known only from San Bruno Mountain in San Mateo County, and Joaquin Miller and Redwood Regional Park areas in Oakland (Arnold 1981). New populations have been detected in the Tri-City area (Vallejo, Benicia, Fairfield) of Solano County at King-

Swett Ranches, Lake Herman, St John's Mine Road, and Hunter Hill. These sites are approximately 10 miles southeast of the project BSA. The adult CSSB is univoltine (one adult flight per year). The adult flight season of the butterfly is about mid-May through mid-July.

The Callippe Silverspot has five basic habitat requirements: presence of grassland habitat, presence of its larval food plant, Johnny jump-up, presence of various nectar plants in or near the grassland, habitat in areas influenced by coastal fog, and hilltops for mate location. As the silverspot is a strong flier, these habitat requirements do not necessarily have to coincide. Adults are particularly fond of various thistles, buckeyes (*Aesculus*), and mint (*Monardella*) species for nectar. A small patch of Johnny jump-up (3-4 individual plants) has been identified near the project site.

The properties surrounding the proposed project site support a mixture of commercial developments, office parks, and agricultural uses (primarily vineyards). Thus, the small patch of Johnny jump-up at the proposed project site is quite distant and isolated from larger patches of the larval food plant that grow in the hills east and north (approximately 24 km (15 mi)) of the project. Other than the presence of a few milk thistles, favored nectar plants such as buckeye trees are absent from the site. The hilltop portion of the site is also small in size and is adjacent to the grape crusher statue where the native vegetation has been converted to park-like landscaping.

Valley elderberry longhorn beetle

The valley elderberry longhorn beetle (VELB) (*Desmocerus californicus dimorphus*) is listed as a federally threatened species (no State listing) and is fully protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). The VELB is completely dependent on its host plant, elderberry (*Sambucus* species), which is a common component of the remaining riparian forests and adjacent upland habitats of California's Central Valley.

The nominate subspecies of California elderberry longhorn beetle (*Desmocercus* californicus) (CELB) occurs within the Coast Range and is a non-listed species, but the exact boundaries, or possible overlap in the geographic ranges of the VELB and the CELB, are not known. Although VELB occurs primarily on the floor of the Central Valley, it does get into the foothills in some places.

According to the CNDDB, VELB has been reported from the southeast of Napa County (near Suisun Creek), however, a Caltrans-contracted consultant, Richard Arnold, Ph.D, who is familiar with the Soscol Junction site believes this observation is based on exit holes on the elderberry plant rather than observations of the adult life stage. Both subspecies use the same elderberry taxa as food plants and make identical exit holes, so one cannot reliably distinguish the two subspecies unless one sees the adult beetles. The consultant Richard Arnold is a professional entomologist who assists government agencies and private industry in environmental, forestry, and technical matters that deal with insects and other types of invertebrates, such as crustaceans, arachnids, and snails.

Two red elderberry (*Sambucus mexicana*) trees occur in the Suscol Creek riparian corridor of the project site, however, they would not be affected by any construction activities. A presence-absence survey was conducted along the Napa River in St. Helena and only the CELB was observed.

Central California coastal steelhead

The central California coastal steelhead [(CCCS), an Evolutionary Significant Unit (ESU) (*Oncorhynchus mykiss)*] is a federally threatened species (not a State listed species). Steelhead is the anadromous form of the rainbow trout, a salmonid species, which is native to western North America and the Pacific Coast of Asia.

The CCCS ESU includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California, and the drainages of San Francisco and San Pablo Bays eastward to the

Napa River, Napa County, California. The ESU excludes the Sacramento-San Joaquin River Basin of the Central Valley of California.

The project area is within Suscol Creek, which has been designated as CCCS critical habitat and is part of the Napa River Hydrologic Sub area.

CCCS have been identified in several reaches of Suscol Creek, upstream and downstream of the project site. Annual CCCS surveys have detected steelhead in Suscol Creek both upstream and downstream of the BSA, although steelhead numbers are greatly lower in the downstream portion (Suscol Creek Collaborative Partnership and Restoration Project 2005, 2006, 2007, 2008, 2009, 2010, 2011).

California freshwater shrimp

The California freshwater shrimp (CFS) (*Syncaris pacifica*) is listed as an endangered species by the USFWS and the CDFW. It is the only existing member of the genus *Syncaris* in California. The CFS is confined to perennial lowland streams in Napa, Marin, and Sonoma Counties. The shrimp are found along the edges of stream pools, in areas away from the main current, where there are often undercut banks and exposed root systems. The habitat is further improved from the adventitious roots that develop on the submerged portions of some herbaceous plants and shrubs that hang into the water. Additionally, they prefer portions of the pools that are around 0.30 to 1.22 m (1 to 4 ft) deep. In times of heavy discharge accompanying storm events, they are thought to avoid the excessive flow by moving underneath the banks or by staying close to the sturdy tree roots along the edges of the pools. During the dry season (June 15 to October 31), they can survive as long as water remains in the pools, even if there is no longer any surface flow between the pools. The existing CFS population is threatened by: introduced fish, deterioration or loss of habitat resulting from water diversion, impoundment, livestock and dairy activities, agricultural activities and development.

Originally, CFS populations were known to occur in nine streams, but by 1975, it was thought that the population had been extinct from six of the streams leaving populations only in Lagunitas (Marin County), in East Austin and Salmon Creeks

(both of Sonoma County), and in Huichica Creek (Napa County). Since the listing of CFS as endangered by the USFWS in 1988, they have been rediscovered in Napa County in the Napa River near Calistoga, and in Garnett Creek. The nearest known population in Huichica Creek is located approximate 8.2 km (5.1 mi) from the BSA. There is no direct hydraulic connection between Huichica Creek and Suscol Creek.

On May 19, 2006 Larry Serpa, a Caltrans contracted biologist, surveyed for CFS from the Soscol Creek Bridge (SR 29) to a point about 50 ft downstream of the Devlin Road Bridge. The intent was to sample the "good" or "excellent" quality habitat, however, there were only three pools that could have provided any suitable habitat. Therefore, the "fair" habitat was also sampled. According to Serpa, "shrimp are hardly ever found in such areas, and even then, are only in "poor" habitat where they don't have other options." Habitat quality is determined by a combination of features known to be important to CFS, including: water depth, presence or absence of undercut banks, and the quality and quantity of tree roots and herbaceous vegetation hanging in the water. If the current is excessive for the species, or if there is too much silt, the habitat quality is reduced in rank; an otherwise "excellent" habitat then becomes "good" habitat.

Based on survey, there was a small amount of "good" habitat in the sampled portions of Suscol Creek, with hard alder roots, undercut for protection, and some adventitious willow roots. However, almost all of the habitat between the bridges was "poor" or "fair". The roots on the Himalayan blackberries were poorly developed at best. No shrimp were found during the sampling.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi)* is federally listed as a threatened species (no State listing). They are present in vernal depressions in grassland with little or no soil development. The Soscol Junction Project site is adjacent to the known range of one federally-listed vernal pool crustacean, vernal pool fairy shrimp, and near the known range of two additional listed species, Conservancy fairy shrimp

(*Branchinecta conservatio*) and vernal pool tadpole shrimp (*Lepidurus packardi*). During USFWS protocol-level biological surveys, conducted in 2007 (wet season) and 2008 (dry season), no listed species of vernal pool branchiopod was found in any of the pond features on the site. These findings and the marginal nature of the potential habitat indicate that vernal pool fairy shrimp, Conservancy fairy shrimp and vernal pool tadpole shrimp are unlikely to occur within the study area.

Swainson's hawk

The Swainson's hawk is considered a state-listed threatened species by the CDFW under CESA. They require large, open grasslands with suitable prey and suitable trees for nests. In California, Swainson's hawks typically forage over grassland or farmland habitat with a preference for alfalfa crops. Swainson's Hawks typically nest in tall trees within riparian areas or in groves or single large trees surrounded by suitable foraging habitat. In the California Central Valley, common nest trees include Eucalyptus, walnut (Juglans spp,), oak, cottonwood (*Populus spp*.), and willow (*Salix spp.*). Swainson's hawks are migratory, and typically occur within California from March to September. Swainson's hawks have been observed actively soaring over the BSA, although currently no active nests have been detected within the BSA.

Swainson's hawks have been observed at Devlin Road and Soscol Ferry Road, and one was sighted during a botanical survey. Caltrans biologists have observed Swainson's hawks soaring over the project limits during site visits in 2012 and 2013.

California Red-legged Frog

The California red-legged frog (CRLF) (*Rana aurora draytonii*) is federally listed as a threatened species and state listed as a species of special concern. CRLF is typically found from sea level to elevations of approximately 5,000 ft. Non-breeding CRLF can occupy both aquatic and upland habitats. The majority of individuals prefer dense, shrubby or emergent vegetation, closely associated with deep (>2.3 feet), still, or slow moving water. Water should have a salinity of no more than 4.5 parts per thousand to ensure the survival of embryonic stages. Juvenile frogs seem

to favor open, shallow aquatic habitats with dense submergents. Although CRLF can occur in ephemeral or permanent streams or ponds, populations probably cannot be maintained in ephemeral streams in which surface water disappears. CRLF usually breed between late November and late April.

Some individuals use habitats that are removed from aquatic habitats, seeking cover in ground squirrel burrows, under boulders and logs, and in non-native grasslands. Upland refugia habitat includes areas up to 295 ft from a stream corridor or breeding pond and includes natural features such as boulders, rocks, trees, shrubs, and logs. In general, terrestrial areas within the riparian corridor provide important sheltering habitat during the winter flooding of the streams.

CRLF movements from one aquatic water body to another typically occur to and from breeding habitats. Movement may occur before or after egg laying, or when the breeding pond is drying. Radio-tracking in Contra Costa County and Marin County reveal that distances varied between 300 ft and 1.75 miles and were typically in a relatively straight line. While many movements occurred across distances of 330-650 ft in open grasslands, other movements taking more than one night were along riparian corridors.

Based on the current knowledge of the life history, biology, and ecology of CRLF and the relationship of its essential life history functions to its habitat, the USFWS has determined primary constituent elements (PCEs) for Critical Habitat of the CRLF. Although the project site and CRLF BSA are not within designated Critical Habitat for the species, the USFWS (2010) definitions summarize the ecological conditions that describe suitable habitat conditions throughout the range of the species:

- **Aquatic breeding habitat** – Freshwater source capable of holding water 20 weeks in all but the driest years.

- **Non-breeding aquatic habitat** – Freshwater bodies and riparian habitat that provide shelter, foraging, predator avoidance and aquatic dispersal for juveniles and adults.

- **Upland habitat** – Habitat adjacent to or surrounding breeding and non-breeding aquatic and riparian habitat, up to 1 mile from aquatic breeding and non-breeding habitat. Upland habitat includes grassland, woodland, forest, wetland, or riparian areas that provide shelter, forage, and predator avoidance (shade, moisture, cooler temperatures, prey base, foraging opportunities, and refugia for predator avoidance). Upland habitat should include structural features such as boulders, rocks and organic debris (e.g. downed trees, logs), small mammal burrows, or moist leaf litter.

- **Dispersal habitat** – Accessible upland or riparian habitat within and between occupied or previously occupied sites that are located within one mile of each other, and that support movement between such sites. Dispersal habitat includes various natural habitats, and altered habitats such as agricultural fields, that do not contain barriers (e.g. heavily traveled roads without bridges or culverts) to dispersal. Dispersal habitat does not include moderate- to high-density urban or industrial developments with large expanses of asphalt or concrete, nor does it include large lakes or reservoirs over 50 acres in size, or other areas that do not contain those features identified in PCE 1, 2, or 3 as essential to conservation of the species.

Critical habitat for this species consists of:

- Specific areas within the geographical area occupied by the species at the time it is listed, in accordance with the provisions of Section 4 of the Federal Endangered Species Act (FESA), on which are found those physical or biological features that are essential to the conservation of the species and that might require special management considerations or protection;

- Specific areas outside the geographic area occupied by the species at the time it is listed, in accordance with the provisions of Section 4 of FESA, upon a determination by the Secretary of Interior that such areas are essential for the conservation of the species.

Critical habitat for CRLF is not present in the project area. The nearest USFWS designated Critical Habitat unit to the project area occurs approximately 1.75 mi southeast in Solano County north of SR 12. The BSA overlaps partially with a USFWS designated CRLF core recovery area.

Within the study area, habitat at three perennial creek sites (Suscol Creek, the tributary to Sheehy Creek, and Sheehy Creek) provides the highest potential for CRLF breeding. These three sites are within the historical range for CRLF, consist of year-round water for basic behavioral requirements and larval development, and include ample vegetation for egg deposits and cover. The two ephemeral creek sites are somewhat limited for breeding due to the absence of water during parts of the year. Although ephemeral drainages and salt marsh habitats present challenges for CRLF larval development, they provide opportunities for movement, forage, and cover.

The proposed project area is located near suitable aquatic CRLF breeding habitat in the form of at least three high-quality perennial drainages. It is reasonable to conclude that the project area potentially could be within suitable CRLF upland aestivation (“summer sleep”) and movement habitat.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: Based upon the above information, Caltrans has determined that the project would have no impacts to the following listed species:

- soft bird's beak (*Cordylanthus mollis ssp. mollis*),
- showy Indian clover (*Trifolium amoenum*),
- Conservancy fairy *shrimp (Branchinecta conservatio*),
- green sturgeon (*Acipenser medirostris),*
- tidewater goby (*Eucyclogobius newberryi*),
- delta smelt (*Hypomesus transpacificus*),
- coho salmon (*Oncorhunchus kisutch*),
- central valley steelhead (*Oncorhynchus mykiss*),
- central valley spring run Chinook salmon (*Oncorhynchus tshawytscha*),
- winter-run Chinook salmon (*Oncorhynchus tshawytscha*),,
- western snowy plover (*Charadrius alexandrinus nivosus*),
- California brown pelican (*Pelecanus occidentalis californicus*),
- California clapper rail (*Rallus longirostris obsoletus*),
- California least tern (*Sternula antillarum browni*),
- northern spotted owl (*Strix occidentalis caurina*), and
- Salt marsh harvest mouse (*Reithrodontomys raviventris*)

Based on the affected environment section, the environmental consequences to the following species are discussed in more detail:

- Contra Costa goldfields
- Callippe Silverspot Butterfly
- valley elderberry longhorn beetle
- central California coastal steelhead
- California freshwater shrimp
- vernal fairy shrimp
- Swainson's hawk
- California red-legged frog

Contra Costa goldfields

B-7: Before CCGF were identified within the project limits, this area was slated to be disturbed by grading activities. Once the presence of CCGF was known, Caltrans altered the boundaries of the project area to avoid any disturbance to CCGF. Therefore, there are no impacts to CCGF populations due to project redesign in order to avoid this species. However, there is still the potential for designated CCGF critical habitat to be disturbed with the construction of the proposed project (see Table 2-23). Alternative 5, Option 1 would temporarily affect 2.78 acres and permanently affect 4.63 acres of CCGF critical habitat. Alternative 5, Option 2 would temporarily affect 2.85 acres and permanently affect 3.23 acres of CCGF critical habitat.

Table 2-23 CCGF Critical Habitat Impacts

	Alternative 5, Option 1		Alternative 5, Option 2		No Build	
	Temporary Impacts acres	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)
Total Impacts	2.78	4.63	2.85	3.23	No Impact	No Impact

However, the areas of Critical Habitat impacted by the project do not contain primary constituent elements (PCEs) for CCGF occurrence. The USFWS defines CCGF PCEs as follows:

> (i) Topographic features characterized by isolated mound and intermound complex within a matrix of surrounding uplands that result in continuously, or intermittently, flowing surface water in the depressional features including swales connecting the pools described in PCE (ii), providing for dispersal and promoting hydroperiods of adequate length in the pools.
>
> (ii) Depressional features including isolated vernal pools with underlying restrictive soil layers that become inundated during winter rains and that continuously hold water or whose soils are saturated for a period long enough to promote germination, flowering, and seed production of predominantly annual native wetland species and typically exclude both native and non-native upland plant species in all but the driest years. As these features are inundated on a seasonal basis, they do not promote the development of obligate wetland vegetation habitats typical of permanently flooded emergent wetlands. (USFWS 2006b)

In addition, Critical Habitat Unit 3 is 534 ac in size. Options 1 and 2 would result in the permanent loss of 0.87 percent and 0.60 percent of area within Unit 3, respectively.

In the federal Endangered Species Act, adverse modification to Critical Habitat is defined as “A direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species.”

The lack of primary constituent elements and small percentage of area loss within Critical Habitat Unit 3 does not rise to the level of adverse modification.

As previously stated, suitable habitat (or individual CCGF plants, populations, or sub-populations) within mapped CCGF Critical Habitat would not be disturbed, destroyed, or removed by construction activities. No direct or construction-related

activities (e.g., construction, construction materials equipment storage) would occur within any potential suitable CCGF habitat within the mapped area of CCGF Critical Habitat. The two CCGF suitable habitat areas located within the BSA, would be protected from construction activities with ESA fencing.

Caltrans is preparing a Biological Assessment (BA) and would consult with USFWS to obtain a Biological Opinion (BO) and concurrence on a “may affect, but is not likely to adversely affect determination” under Section 7 of FESA for CCGF and CCGF Critical Habitat.

Callippe Silverspot butterfly

Due to the small biomass of the Johnny jump-up, its isolation and distance from the nearest known larger patch of this food plant, the surrounding unsuitable habitat and land uses on all sides of the project site, it is very unlikely that the Callippe silverspot utilizes the Soscol Junction site. The quality of breeding, foraging, and mate location habitats at the project site is very poor.

These findings lead to the conclusion that neither Alternative 5, Option 1 nor Alternative 5, Option 2 would have an impact on the Callippe Silverspot Butterfly. Unless new information arises, Caltrans concludes that the proposed project would have “no effect” on the Callippe silverspot butterfly.

Valley elderberry longhorn beetle

Occurrence of the VELB at Suscol Creek is unlikely; it is more likely that the beetle present is the CELB. There would be no impacts to the two red elderberry trees growing outside the construction zone of either the flyover columns or the column falsework. The riparian zone containing the red elderberry trees would be protected by ESA fencing. These findings lead to the conclusion that the project would have “no effect” on the VELB.

California coastal steelhead

B-5: As the project is to be constructed above the Ordinary High Water Mark (OHWM), Temporary and permanent impacts to CCCS are not anticipated. The proposed project would have “no effect” to CCCS.

California fairy shrimp

Because no individuals were found in surveys and because of the shortage of good habitat, Caltrans-contracted consultant Larry Serpa determined that the proposed project is unlikely to have any impact on this species in this area of the stream.

Caltrans has determined that the proposed project would result in no permanent loss of CFS habitat and result in “no effect”. No permanent impacts would result from either constructing the falsework, or the flyover section. No work would occur below the OHWM of Suscol Creek.

Vernal pool fairy shrimp

Based upon the above information, Caltrans has determined that the project would have “no effect” on vernal pool fairy shrimp.

Swainson’s hawk

B-3: Potential Swainson’s hawk nesting habitat may be directly impacted by the removal or trimming of trees on the bank of Suscol Creek. These trees also may serve as perching sites. In addition, a negligible amount of Swainson’s hawk grassland foraging habitat would be permanently or temporarily directly impacted by the proposed project.

The maximum acreage for both permanent and temporary effects for Option 1 and 2 is 22.71 and 23.66 ac, respectively. This would account for a maximum disturbance (i.e. 23.66 ac) of approximately 0.16% of potential foraging habitat based on published maximal foraging area, and 0.24% based on mean foraging area.

Based on the small amount of vegetation disturbance relative to published territory sizes and the current lack of active nests within the BSA, it is expected that there would be immeasurable or discountable impacts to Swainson's hawk foraging habitat or potential nesting habitat. Because Swainson's hawk is a state listed species only, no "effect" calls pursuant to the Federal Endangered Species Act would be made.

California Red-Legged Frog

B-6: Because the proposed project would impact aquatic dispersal habitat at the tributary to Sheehy Creek wetlands, Caltrans inferred presence of CRLF within the project area. Caltrans-contracted biological consultants conducted a habitat assessment for the CRLF on the project site, and as a result Caltrans has determined that the project would have the following impacts on CRLF habitat:

Table 2-24 Temporary and Permanent Impacts to CRLF Potential Habitat

	Area of Effect in Acres, Option 1		**Area of Effect in Acres, Option 2**	
Habitat Type	**Temporary**	**Permanent**	**Temporary**	**Permanent**
Potential Breeding habitat (B)	0	0.07	0	0.07
Potential Aquatic dispersal habitat (A)	0.17	0.19	0.16	0.19
Total aquatic habitat (C = B+A)	0.17	0.26	0.16	0.26
Potential Riparian dispersal habitat (R)	0.23	0.00	0.23	0.00
Potential Upland dispersal habitat (U)	11.59	8.95	12.43	8.89
Combined dispersal Habitat (D = R + U)	11.82	8.95	12.66	8.89
TOTAL AFFECTED AREA	**11.99**	**9.21**	**12.82**	**9.15**

As shown in Table 2-24, for Alternative 5, Option 1, 9.21 acres of CRLF potential habitat would be permanently affected and 11.99 acres would be temporarily affected. For Alternative 5, Option 2, 9.15 acres of CRLF potential habitat would be permanently affected and 12.82 acres would be temporarily affected. Based on the proximity of the proposed project to known CRLF occurrences and the presence of suitable habitat throughout the project area, the Soscol Junction Project would have

minor direct impacts to CRLF under either Build Alternative. Caltrans would submit a Biological Assessment (BA) and consult with USFWS to determine the appropriate effect determination on CRLF under Section 7 of the FESA. A biological opinion (BO) would be issued by the USFWS.

No Build Alternative: The No Build Alternative would not impact the above listed species or the CCGF or CCGF Critical Habitat, Callippe Silverspot Butterfly, CCCS, VELB, CFS, vernal pool fairy shrimp, Swainson's hawk and CRLF.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: There are no avoidance, minimization and/or compensation measures proposed for these species: Callippe Silverspot Butterfly, VELB, CFS and vernal pool fairy shrimp. Avoidance, minimization, and/or mitigation measures are discussed below for the CCGF, CCGF Critical Habitat, and CCCS, Swainson's hawk and CRLF. Temporary impacts would be avoided through the following avoidance and minimization measures:

Contra Costa goldfields

B-7: Environmentally Sensitive Area (ESA) fencing for the CCGF and CCGF Critical Habitat, would be used to protect all areas within the mapped CCGF Critical Habitat located adjacent to the construction zone. This area would be clearly marked to avoid inadvertent encroachment of personnel or equipment beyond the designated work area.

Erosion control measures would be implemented to minimize the potential for stormwater runoff or other construction debris to enter suitable habitat adjacent to the construction zone.

No hydro modification would occur to the vernal pools with CCGF east of SR 221.

Construction-related dust would be managed using Caltrans standard BMPs, including water trucks and appropriate speed limits**.**

Caltrans would consult with the USFWS for CCGF under Section 7 of FESA. There is no specific compensatory mitigation necessary or proposed for this species because construction would not occur within areas suitable for CCGF presence.

Central California coast steelhead

B-5: The following measures are intended to avoid the potential for temporary impacts to CCCS:

- Work in Suscol Creek during low-flow periods between June 15 and October 15 to avoid temporary impacts to CCCS during the migratory season.
- Store all equipment outside of Suscol Creek.
- Install a fence that would outline and protect ESAs prior to the start of construction. The ESA fencing would be delineated on the final plans, and the fence would remain on-site until job completion.
- Install silt fences on the slopes adjacent to the work area to prevent silt from entering the watershed. Erosion control measures would be maintained during construction.
- Work would occur in the channel of Suscol Creek outside of the ordinary high water zone between June 15 and October 15 (This work window is only for work in Suscol Creek and the riparian area). Therefore, water diversion or dewatering is not anticipated. If it is determined that work within the wetted areas of Suscol Creek is necessary or that areas below the OHWM may be affected, Section 7 consultation with NMFS would be initiated.
- Use falsework beams, which would span the creek, would avoid installation of falsework piles into the stream channel.
- All excess soil would be disposed of at an approved upland site.
-

Swainson's hawk

B-3: Potential mitigation for Swainson's hawk would be dependent on if nesting activity occurs within or in the vicinity of the project limits. If nesting activity occurs, Caltrans would consult with CDFW or USFWS to determine the best course of action.

Activities could include:

- If possible, trees would be trimmed or cut to ground level between September 1 and February 15. Regardless, trees would be surveyed for nesting birds prior to trimming or cutting. For active nests, no work would occur within 600 feet of Swainson's hawk nests.

California red-legged frog

B-6: Caltrans would also mitigate for permanent and temporary impacts to CRLF habitat. Mitigating lost habitat at a 3:1 ratio offsite for permanent unavoidable impacts, and a 1:1 ratio for onsite mitigation for temporary impacts is common practice. Permanent mitigation is typically purchased as credits and/or a site is found that is suitable for creating a conservation easement which can be monitored for growth and establishment. Temporary mitigation is the art of restoring the lost habitat to the existing conditions. Where applicable Caltrans has incorporated a number of avoidance and minimization measures into the proposed project for CRLF:

- For seasonal avoidance of the CRLF, construction would not occur from November 1 through May 31 near drainages rated as high quality CRLF aquatic habitat to the maximum extent practicable. If any work remains to be completed after November 1, appropriate exclusion fencing would be placed in those areas where construction needs to be completed. Design modifications, such as relocating staging areas or reducing the temporary work area have been incorporated, which allowed Caltrans to avoid some CRLF habitat and reduce potential effects.

- Best management practices include:
  - Caltrans would avoid effects to aquatic features beyond the project footprint by employing permanent and temporary BMPs, including a SWPPP and erosion control BMPs.
  - To avoid attracting CRLF predators, all food related trash items such as wrappers, cans, bottles, and food scraps would be disposed of in closed containers and would be removed at least once a day from the entire project site.
  - To prevent harassment, injury, or mortality of CRLF or destruction of burrows that may be used by CRLF, no canine or feline pets would be permitted in the project action area (PAA).
  - All grindings and asphaltic concrete waste would be stored within previously disturbed areas and at a minimum of 50 feet from any perennial or ephemeral creek.
- Restoration of temporarily disturbed habitat would include: The topography and grade would be restored to preconstruction conditions in CRLF habitats that are temporarily affected to the maximum extent possible.
- Environmentally Sensitive Areas:
  - Where possible, construction activities in the temporary work area would avoid CRLF aquatic habitat. Any CRLF aquatic habitat within the temporary work area that can be avoided would be designated as an ESA and would be protected with appropriate fencing.
- Preconstruction and construction surveys, and species handling measures:
  - A USFWS-approved biologist shall be onsite to monitor the initial ground disturbance activities for the road construction and restoration activities. The biologist shall perform a clearance survey immediately prior to the initial ground disturbance.
  - Pre-construction surveys for CRLF would be conducted by a USFWS-approved biologist no more than 30 working days prior to any ground disturbance in or near suitable habitat.
  - All CRLF encountered in the project area shall be relocated by the biologist to a USFWS-approved location.

  - Biologists would take precautions to prevent introduction of amphibian diseases to the project area by disinfecting equipment and clothing as directed in the California tiger salamander survey protocol titled *Interim Guidance on Site Assessment and Field Surveys for Determining Presence or a Negative Finding of the California Tiger Salamander* and the recommended equipment decontamination procedures within the USFWS's *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog*

- Entrapment prevention measures would include:
  - Plastic monofilament netting (erosion control matting) or similar material would not be used at the project site because CRLF may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

The proposed CRLF mitigation strategy includes both onsite restoration and offsite (mitigation bank) measures. Onsite restoration would restore the affected habitats to pre-project conditions. For temporary direct impacts, the proposed mitigation is onsite restoration at a 1:1 ratio. Caltrans proposes to mitigate 3:1 for permanent impacts. Final mitigation would be determined during formal consultation with the USFWS. See Table 2-25 and S-1 for Caltrans proposed CRLF mitigation.

Table 2-25 Proposed CRLF Mitigation

Habitat Type	Mitigation in Acres, Option 1		Mitigation in Acres, Option 2	
	Temporary (1:1 ratio)	**Permanent (3:1 ratio)**	**Temporary (1:1 ratio)**	**Permanent (3:1 ratio)**
Potential Breeding habitat (B)	0	0.21	0	0.21
Potential Aquatic dispersal habitat (A)	0.17	0.57	0.16	0.57
Combined potential aquatic habitat (C = B+A)	0.17	0.78	0.16	0.78
Potential Riparian dispersal habitat (R)	0.23	0.00	0.23	0.00
Potential Upland dispersal habitat (U)	11.59	26.85	12.43	26.68
Combined dispersal Habitat (D = R + U)	11.82	26.85	12.66	26.68
TOTAL MITIGATION	**11.99**	**27.68**	**12.82**	**27.45**

No Build Alternative: There are no avoidance, minimization and/or compensation measures proposed for any of the aforementioned species.

2.3.8 INVASIVE SPECIES

Regulatory Setting

On February 3, 1999, President William J. Clinton signed Executive Order (EO) 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 (FHWA) guidance issued August 10, 1999 directs the use of the State's invasive species list, maintained by the California Invasive Species Council to define the invasive species that must be considered as part of the National Environmental Policy Act (NEPA) analysis for a proposed project.

Affected Environment

Several non-native, invasive plant species are present within or adjacent to the project area, as listed in Table 2-26. These species dominate much of the roadway landscape along the project area due to much of the landscape being affected by grading, filling, or spraying or being left abandoned or ungrazed.

Table 2-26 Invasive Plant Species Present within the Project Area

Common Name	Scientific Name	Location Where Observed	Ecological Impact*	Invasive Potential*
Wild oats	*Avena fatua*	Ruderal grassland	B	B
Mediterranean mustard	*Hirschfeldia incana*	Ruderal grassland	B	B
Common mustard	*Brassica rapa*	Ruderal grassland	C	B
Slender wild oat	*Avena barbata*	Ruderal grassland	B	B
Sweet fennel	*Foeniculum vilagare*	Ruderal grassland	A	B
Yellow star thistle	*Centaurea solstitialis*	Ruderal grassland	A	B
Italian thistle	*Carduus pycnocephalus*	Ruderal grassland	B	B
*A = severe, B = moderate and C = limited, as derived from the California Invasive Plant Council **Source: Natural Environment Study, 2011 and http://www.cal-ipc.org/ip/inventory/weedlist.php**				

All of these species are very difficult to eradicate. The removal of all parts of the plant before viable seed can develop, including roots and rhizomes, can help control infestations, although the removal of all plant material from the site is necessary to reduce the incidence of growth from rhizome, stolon, or stem fragments. In addition, follow-up removal of re-sprouts is essential to prevent re-infestation. The majority of non-native, invasive plant species produce seeds that germinate readily following disturbance.

Environmental Consequences

Alternative 5, Option 1 & Alternative 5, Option 2: Non-invasive species would be utilized for landscaping and the proposed project is not anticipated to introduce any new infestations of invasive species. However, care must be taken to avoid increasing the existing infestations by dispersing seed or viable plant material through construction equipment use when grading, particularly when removing embankment material.

No Build Alternative: There are no impacts regarding invasive species under the No Build Alternative.

Avoidance, Minimization and/or Mitigation Measures

Alternative 5, Option 1 & Alternative 5, Option 2: Caltrans will direct its contractors to include measures such as worker training, avoidance of sensitive communities, and cleaning construction machinery before use on subsequent projects in sensitive communities to reduce the likelihood that noxious weeds would be spread by the proposed project.

Caltrans would require that disturbed areas be restored and re-vegetated after construction is complete to prevent noxious weeds from colonizing new areas.

In compliance with the Executive Order (EO) on Invasive Species, EO 13112, and subsequent guidance from FHWA, the landscaping and erosion control included in the project would not use species listed as noxious weeds, as identified in California Invasive Plant Council (Cal-IPC) and the state noxious weed list. In areas of particular sensitivity, extra precautions would be taken if invasive species are found in or adjacent to the construction areas. These include the inspection and cleaning of construction equipment and eradication strategies to be implemented should invasion occur.

No Build Alternative: No avoidance, minimization and/or mitigation measures are proposed under the No Build Alternative.

2.4 CUMULATIVE IMPACTS

Regulatory Setting

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

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive 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 introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is necessary and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

Methodology

The following eight steps, based on the Caltrans "Guidance for Preparers of Cumulative Impact Analysis" were used as guidelines for identifying and assessing cumulative impacts:

1. Identify the resources to consider in the cumulative impact analysis by gathering input from knowledgeable individuals and reliable information sources. This process is initiated during project scoping and continues throughout the NEPA/CEQA analysis. The analyses provided in earlier Sections 2.1.1 to 2.3.8 were used as the basis for determining whether the Build Alternatives, after any mitigation, would potentially contribute to cumulative impacts.
2. Define the geographic boundary or Resource Study Area (RSA) for each resource to be addressed in the cumulative impact analysis.
3. Describe the current health and the historical context of each resource.
4. Identify the direct and indirect impacts of the proposed project that might contribute to a cumulative impact on the identified resources.
5. Identify the set of other current and reasonably foreseeable future actions or projects and their associated environmental impacts to include in the cumulative impact analysis
6. Assess the potential cumulative impacts.
7. Report the results of the cumulative impact analysis.
8. Assess the need for mitigation and/or recommendations for actions by other agencies to address a cumulative impact.

Projects Considered in the Cumulative Impacts Evaluation:

In addition to the impacts of the Soscol Junction Project, impacts from other projects have been evaluated to determine their potential contributions to cumulative environmental impacts. To determine what projects should be included in the impact discussion, Caltrans identified a list of past, present, and foreseeable future projects (Table 2-2) in the project vicinity. After careful consideration of all the projects, not all the projects listed in Table 2-2 (Existing and Future Land Use) contributed to cumulative impacts. The projects that did share impacts with Soscol Junction Project can be found in their keyed locations shown in the appropriate figures and tables under the individual resource discussed. The projects in Table 2-2 were

considered in the discussion of "Resources considered but withdrawn from further analysis" below.

Various sources were consulted to attempt to be as inclusive as possible; however some projects may have been omitted because: they were new and not enough information was available yet; they have no impact; or they are only conceptual in nature. The sources consulted include the following:

- Governor's Office of Planning and Research Office database of environmental documents (database can be accessed on the world wide web at www.ceqanet.ca.gov);
- The Department's District 04 Intergovernmental Review/CEQA unit;
- The Metropolitan Transportation Commission's Transportation 2035 Plan, April 2009 (www.mtc.ca.gov/planning/2035_plan/index.htm); and
- Napa County (www.co.napa.ca.us)
- City of Napa (www.cityofnapa.org)
- City of American Canyon (www.ci.american-canyon.ca.us/)

Resources considered but withdrawn from further analysis

All project-specific resources that are discussed throughout Chapter 2 are considered for cumulative effect analysis. However, although various impacts to resources may occur due to the proposed project, the following resources will not be explored in further detail because it has been concluded that they would not have a cumulative effect so no further analysis is necessary:

Bicyle and Pedestrian Resources:

The Build Alternatives would not conflict with any Caltrans directives, local policies or ordinances. The project design would apply the Caltrans Deputy Directive on Complete Streets – Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated and maintained to provide safe mobility for all users, where appropriate to the function and context of the facility. Bicycle access is prohibited along SR 29 within the project study area. SR 221 serves as an alternative to SR 29 for motorists and bicyclists into the City of Napa.

The Napa County Board of Supervisors adopted the NCTPA's Napa Countywide Bicycle Plan June 26, 2012, containing a 25-year vision for a set of interconnected local bicycle networks, made up of all types of bikeways. These include "Class I" multi-use paths, physically separated from roadways, "Class II" bike lanes, designated by striping on roads and "Class III" bike routes, which are roadways designated to be shared by bicycles and other vehicles. (http://www.nctpa.net/nctpa-countywide-bike-plan-0.

With regard to SR 29, the Plan envisions a separate facility contiguous 47-mile Class I trail called the Napa Valley Vine Trail (see Figure 2-2). As proposed, it would be spanning from the City of Vallejo's Ferry to Calistoga. A portion of the Napa Valley Vine Trail, is proposed to run along Soscol Ferry Road and Devlin Road, adjacent to SR 12 and SR 29, through the proposed Soscol Junction Project area.

The San Francisco Bay Trail has requested a grant to construct a 0.8 mile segment of Bay, River and Vine Trail that would provide the only link between the cities of American Canyon and Napa .In addition, 1.6 miles of waterfront Bay, River, and Vine Trail are in the permitting phase at the Napa Pipe site directly adjacent to the north. Once constructed in approximately two to three years, this segment will connect to an existing Bay Trail at Kennedy Park and the Maxwell Bridge on Imola Drive resulting in six miles of contiguous Bay Trail from Soscol Ferry Road to Imola Drive.

Because the impacts from the proposed project would not impede the current policies, ordinances or directives, the Build Alternatives would not result in considerable contribution to a cumulative impact related to bicycle and pedestrian safety.

Geological Resources: The project site is located within a seismically active region dominated by the northwest trending San Andreas fault. Because the project site is located in a seismically active area and contains geological hazards of varying degrees, the proposed project has the potential to result in localized impacts on geology and soils. While other past, present and reasonably foreesable projects may impact the geology at their project sites, the impacts would be localized and would not impact regional geology. Cumulative impact is not anticipated because the effects of the proposed projects, and other projects cannot be combined.

Paleontology: Because the specific locations of the paleontological resources are unknown, impacts are not predetermined and cannot be quantified until after construction begins. In this case, it is possible that potentially sensitive geological units in the project area could be exposed during ground-disturbing construction activities. If no protective measures were employed, then paleontological resources may be destroyed by construction activities and/or left unrecorded for their scientific value. However, even if discoveries occur in the project area, sensitive geologic units cannot be quantified as a cumulative impact. A paleontological impact could be quantified as cumulative only if it occurred in the exact same project area and the

exact same geologic units were to be affected by a past, future, or foreseeable project. Neither of these statements is true when applied to the proposed project. Therefore, direct or indirect cumulative impacts related to paleontological resources are not anticipated to result. In addition, the Soscol Junction project proposes implementation of the mitigation measures in Section 2.2.4 that would effectively recover the scientific value of any fossils discovered during construction.

Hazardous Waste: Cumulative impacts are not anticipated because disturbance to ADL and thermoplastic removal under the Build Alternatives would not extend beyond the project study area. No other projects were identified to occur within the study area at the time the Soscol Junction project is planned for construction.

Noise: Caltrans' noise study finds that, based upon the worst case scenario, the traffic noise after construction of the project is predicted to increase by no more than 2.4 dBA (h) Leq over the existing noise level at the closest sensitive receptor. This increase would be less for residences further away from the project. Caltrans is not aware of any other local developments that would contribute to the 2.4 dBA Leg (h) increase in traffic noise. An example of a contributing project would be the widening of a road between the project and the closest sensitive receptor. As no plans exist for such development, the Soscol Junction Project would be the sole contributor to the 2.4 dBA Leg (h) increase. Furthermore, since a difference in traffic noise of less than 3 dBA Leq (h) is undetectable to the human ear, cumulative impacts from noise are not anticipated.

None of the projects listed in Table 2-2 are expected to be under construction at the time the Soscol Junction project is planned for construction. Therefore, no temporary cumulative construction related noise impacts are anticipated.

Utilities: The Build Alternatives would require relocation of utilities but no expansion of services or capacity would be needed. Therefore, this topic does not merit further analysis.

Central California steelhead: There are no impacts to the CCCS because all construction work will take place outside of the species suitable habitat, above the ordinary high water mark (OHWM). Therefore, no cumulative impacts are anticipated to CCCS.

Contra Costa goldfields (CCGF) and CCGF Critical Habitat: Of the other projects listed in Table 2-2, none are expected to directly or indirectly create or increase impacts to the CCGF population within the USFWS current range distribution. Since there are is other project that identified potential impacts to CCGF no cumulative impacts are anticipated.

Water Quality: Water Quality was dismissed from further consideration of cumulative analysis because Caltrans anticipates permanent BMPs using best available technologies to be effective in reducing the rate of stormwater discharge and removing pollutants from added impervious areas and erosion control to address areas of disturbed soil. Specific form and location of permanent BMPs will be determined during design, avoiding biologically sensitive areas, such as wetlands and waters. In addition, construction site BMPs will be implemented to prevent temporary impacts to surface waters.

Cumulative Analysis for Resources Discussed:

The resources that required further analysis discussed in this cumulative impact assessment are:

- *Traffic and Transportation (Section 2.1.7)*
- *Visual Quality (Section 2.1.8)*
- *Archaeological Resources (Section 2.1.9 under Cultural Resources)*
- *Air Quality (Section 2.2.6)*
- *California red-legged frog (Section 2.3.7 under Federally Listed Animal Species)*
- *Swainson's hawk (Section 2.3.5)*
- *Wetlands and Other Waters (Section 2.3.2)*

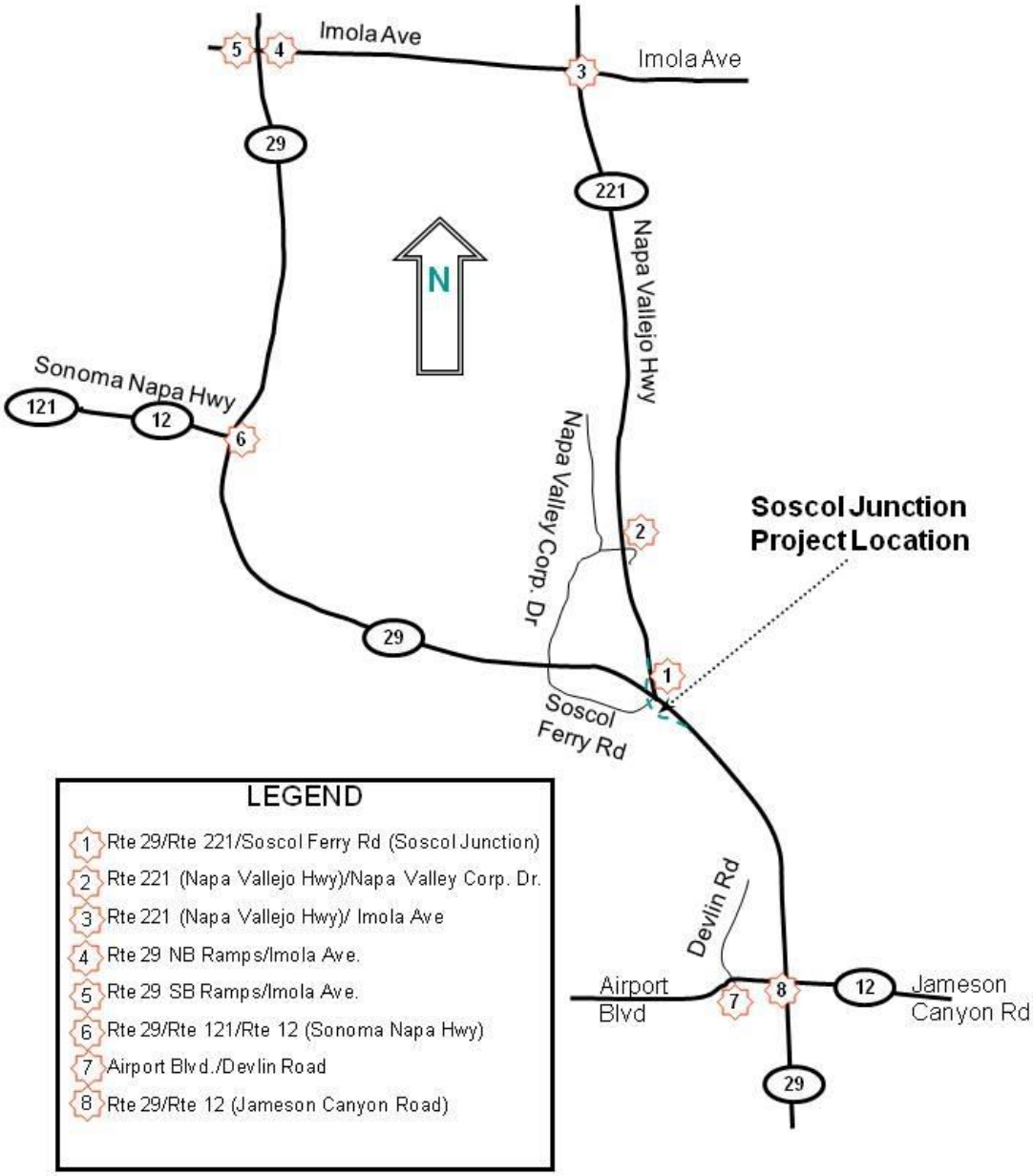
The basis for assessing cumulative impacts depends upon the impact of the Soscol Junction Project as well as other projects within a related geographic area. Each resource is evaluated by: Geographic Study Area (or Resource Study Area); Resource Trends; Health and History; and Discussion of Environmental Consequences and Mitigation Measures.

Traffic and Transportation

Geographic Study Area

The Resource Study Area (RSA) is defined as the area within the project limits combined with the surrounding area where the project could result in measurable changes in traffic patterns. The RSA was chosen because it was large enough to include nearby intersections, and small enough so that potential cumulative impacts were not obscured. Thus, the RSA includes the freeway segments and intersections identified in the tables in Section 2.1.7 Traffic and Transportation, and is shown in the figure below. The Napa Pipe Project was not included in the original traffic analysis. Therefore, an additional forecast was performed displaying the traffic impacts from the proposed project, including the Napa Pipe Project. Other projects in the RSA are not individually called out in this analysis because they are already included in the forecast analysis, i.e. the ABAG study already factors in the past, present, future foreseeable projects.

Figure 2-17 Resource Study Area for Traffic Resources



<u>Resource Trends</u>

Information below was acquired from reviewing the currently in effect Napa County General Plan www.countyofnapa.org/GeneralPlan, adopted in 2008.

Napa County's key industry is agriculture, which relies heavily on the circulation system to move workers, visitors, services, and products from vineyard to winery and from winery to market. Residents of Napa County travel to work, school, and to shop. Napa County visitors rely on Napa's transportation system to provide a safe and convenient way to access the county's many destinations.

Napa County lacks direct access to the only interstate freeway located within its borders (I-80), which is accessible via SR 29 and SR 12.

In Napa Valley, some roadways are more urban in character and a portion of SR 29 north of SR 121 is designated as a freeway. Additionally, a portion of SR 29 between SR 37 and SR 12/121 is considered to be a part of the National Highway System. Roadways that serve the incorporated cities and towns within Napa County are often four lanes wide.

Based on the Association of the Bay Area Government's (ABAG) *Projections 2007*) vehicular traffic in Napa County is expected to increase as growth in Napa County and the region continues. The 2007 projections were reviewed for purposes of this document and determined to be valid. . Existing and projected traffic volumes in relation to the Soscol Junction Project can be found in Section 2.1.7, Traffic and Transportation of this document.

Much of the expected increase in traffic will result from commuter traffic due to residential development within the incorporated cities in Napa County or from employment growth outside of the county, such as in the Bay Area and the Sacramento region. Currently, approximately 87% of commuting in Napa County is by car and approximately 22% of Napa County residents commute to jobs outside of the county.

Currently, many of the major roads within Napa County are already close to or over capacity. In addition to commuter traffic, Napa County traffic is generated from the

many tourists who visit the area. Tourists generally travel on the major roads as they are less familiar with the county than residents, thereby increasing the congestion on these roads.

Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

As can be seen in Section 2.1.7, implementation of the project under either Build Alternative would provide shorter wait times in 2039 at the Soscol Junction Intersection than under existing or future No Build conditions. The delays in Table 2-8 and 2-9 of Section 2.1.7 include forecasted demand in 2039 based on land use plans regulated by Napa County. At the time the demand model was completed in 2008, the County had not yet approved the Napa Pipe Project, which required a General Plan amendment and a zoning revision as part of its project approval. To complete the picture of demand that may be posed by future foreseeable developments, Caltrans included the Napa Pipe Project as part of its cumulative analysis demand model in 2011. The 2008 and 2011 analysis demand models are still valid because the most recent applicable travel demand models show Napa County development lagging by five or more years compared to the models used for the existing Soscol Intersection forecasts. The traffic counts in the project area are very similar to the older counts used in the existing forecasts and do not show a significant increase. There are some variations in assumptions between the two forecasts which has produced some data showing marginally greater reductions in delay in 2039 under cumulative traffic conditions compared to the Soscol Junction Project alone; however the overall findings of the analysis in the following summary are valid, because the older model produces less conservative results that newer model.

Table 2-27 shows seconds of delay under all alternatives with the completion of the Napa Pipe development. This table shows that delays at the Soscol Junction intersection would lessen under any of the Build Alternatives even under cumulative traffic conditions. For instance, delay in the AM Peak Period under Alternative 5,

Options 1 and 2 would be 164 seconds and 1 second, respectively, compared to 423 seconds at Soscol Junction under the No Build scenario. Similarly, delay in the PM Peak would be 248 seconds and 4 seconds under Alternative 5, Options 1 and 2, respectively, compared to 436 seconds at Soscol Junction under No Build cumulative traffic conditions.

Table 2-27 2039 Soscol Junction with Napa Pipe

Intersection	No Build Alternative				Alternative 5, Option 1				Alternative 5, Option 2			
	AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period		AM Peak Period		PM Peak Period	
	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS	Delay in sec	LOS
SR 29/221/ Soscol Ferry Road (Soscol Junction)	423	F	436	F	164	F	248	F	1	A	4	B
SR 221/Napa Valley Corporate Drive	37	D	150	F	171	F	138	F	83	F	37	D
SR 221/Imola Avenue	77	E	212	F	76	E	175	F	80	E	176	F
SR 29 NB ramps/Imola Avenue	62	E	22	C	22	C	17	B	18	B	32	C
SR 29 SB ramps/Imola Avenue	12	B	12	B	17	B	28	C	18	B	28	C
SR 29/121/12	170	F	214	F	165	F	201	F	130	F	186	F
Airport Boulevard/ Devlin Road	13	B	17	B	52	D	17	B	13	B	16	B
SR 29/12	236	F	278	F	263	F	284	F	498	F	640	F

Green indicates better LOS compared to No Build; Yellow, No Change; Red, Worse LOS
Intersections are ordered in numerical sequence of intersections shown in Figure 2-16.

At some intersections along SR 221, delays would be greater under the Build Alternatives while other intersections would experience reduced delay and improvements in LOS. The LOS at the SR 221/Napa Valley Corporate Drive intersection would worsen from LOS D under the No Build to F in the AM peak under the Alternative 5, Option 1 and to a slightly less severe F under Alternative 5, Option 2. However, in the PM peak delay would be reduced but LOS would remain unchanged under Alternative 5, Option 1. Conversely, LOS would improve from F to D in the PM peak under Alternative 5, Option 2.

In terms of delay, at the SR 221/Napa Valley Corporate Drive, there would be an increase of 2 minute delay in the AM peak under Alternative 5, Option 1, and a comparable reduction of 2 minutes in the PM Peak at this same intersection under Alternative 5, Option 2.

At some SR 29 intersections, delay under the No Build Alternative would be less than under either Build Alternative, while others would maintain LOS under all alternatives. At the SR 29/12 intersection, delay would worsen under Alternative 5, Option 2 to 498 seconds in the AM peak and 640 seconds in the PM peak compared to 236 seconds and 278 seconds, respectively, under the No Build.

The traffic model results indicate delay would be worse at SR 12/29 because reduced delay at the Soscol Junction means that some delay will be moved down to the nearby intersection. Currently, there is no project planned to reduce delay at SR 12/29. At this time, Soscol Junction serves as a main intersection and is the top priority for reducing delays. At the SR 29 NB ramps/Imola Avenue the LOS in the AM peak would improve under either Build Alternative compared to the No Build, with Alternative 5, Option 2 being a slight improvement over Option 1. Under Alternative 5, Option 1, a slight reduction in delay from 22 to 18 compared to the No Build would improve LOS from C to B.

Increased delay at nearby intersections is partially attributable to increased demand in 2039 and to the removal of the signal at Soscol Junction intersection, allowing traffic to reach other intersections more quickly. On balance, the distribution of gains

and losses in delay even out with the exception of the SR 29/12 intersection. The LOS F at SR 29/12 would be maintained under all alternatives including the No Build, but delay worsens considerably under Alternative 5, Option 2, doubling in the AM peak compared to the No Build. The PM peak condition worsens even more, up to 640 seconds of delay in the PM Peak under this alternative compared to the No Build. In conclusion, with Alternative 5, Option 2 the Soscol Junction Project would cause cumulative traffic effects within the study area because of its contribution to delays at the SR 12/29 intersection. However, most vehicles that will utilize the SR 29/12 intersection will also pass through the Soscol Junction. For Alternative 5, Option 2, the combined time to travel through these two intersections is anticipated to be reduced. Therefore, overall the project is anticipated to result in beneficial traffic impacts in the cumulative condition.

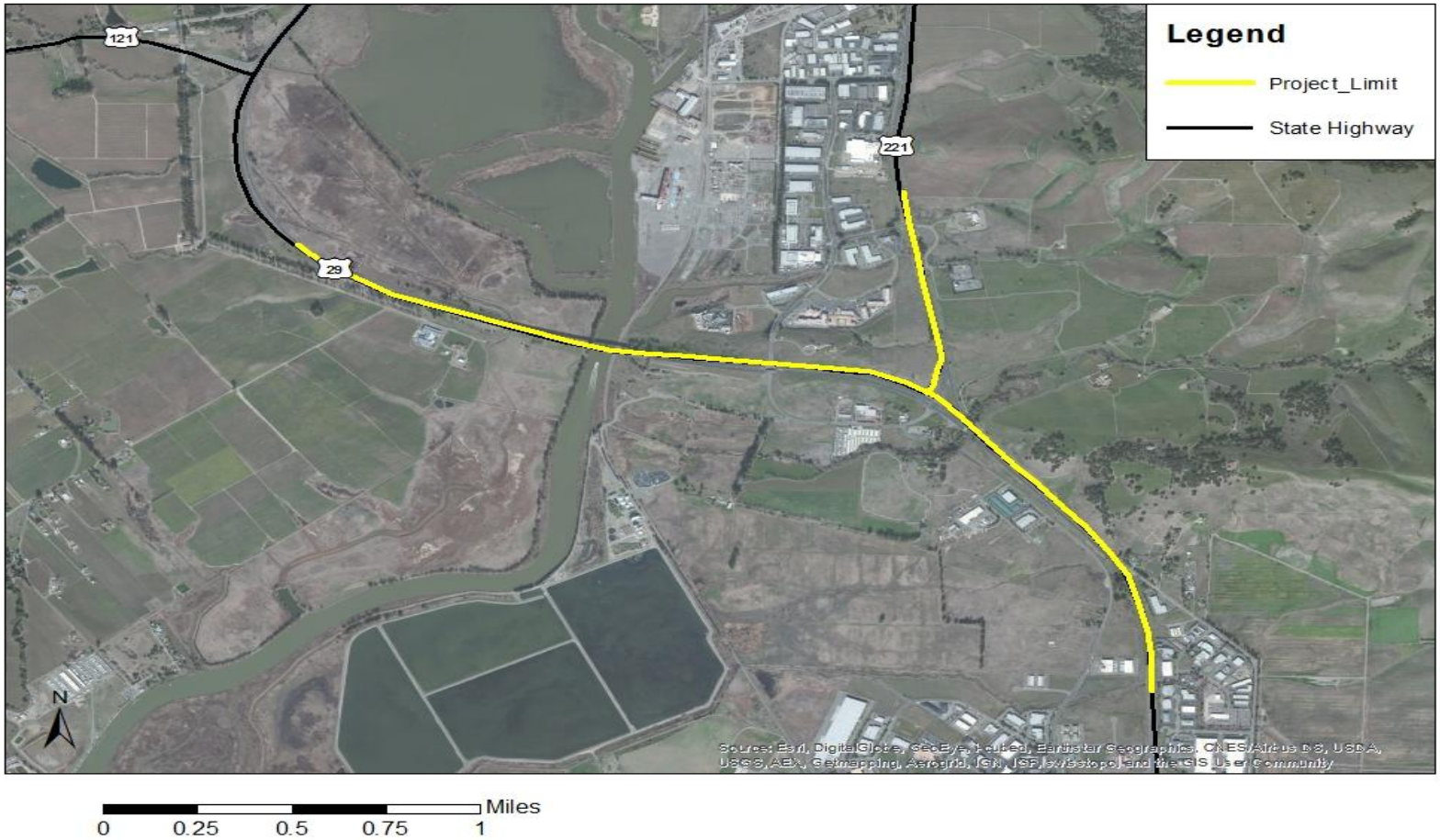
Visual/Aesthetics

Geographic Study Area

The project view shed is comprised of the geographic area within which the proposed project is visible and is defined by topography, distance, and other features of the landscape. It consitiutes the limits of the proposed project's visual environment and serves as the primary Resource Study Area (RSA) for visual quality/aesthetics.

The Resource Study Area (RSA) for potential cumulative impacts on visual/aesthetic resources extends beyond the primary project view shed. The expanded RSA was identified based on the visual characteristics of the landscape. It includes the area both north and south of the proposed Soscol flyover where the character of the landscape remains similar to the character that exists in the immediate vicinity of the proposed flyover. It extends north along SR 29 from SR 221 over the George Butler Bridge to approximately one mile beyond (north of) the junction with SR 12/121. It extends south along SR 29 from SR 221 to the area where Kelly Road joins the northbound lanes of SR 29. It extends north along SR 221 from SR 29 1.5 miles to Basalt Road.

Figure 2-18 Resource Study Area for Visual Resources



Resource Trends

The landscape along these highway corridors features sparse development within a mostly open, rural setting. It features gently rolling grass-covered hillsides dotted with native Oak trees, vineyards, and occasional groves of eucalyptus trees. The flat plain of the Napa River and its wetlands east of SR 29 and south of the City of Napa is also a notable feature of the landscape.

Although some development has occurred in the vicinity over time, the area has undergone little visual change. Newer development outside the RSA has occurred to the south in the vicinity of the Napa County Airport and the City of American Canyon. Within the RSA, recent development has been confined for the most part to the area north of SR 29 between the Napa River and SR 221. This area is not highly exposed to views from SR 221 where large numbers of viewers are present. It is however visible at a distance of from ½ to 1 mile from SR 29 while motorists are on the George Butler Bridge, and in distant views from near the southern fringe of the City of Napa.

Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

Cumulative visual impacts could occur within the cumulative visual/aesthetic impacts RSA from incremental impacts to the overall visual character and reductions in visual quality caused by individual projects which, taken alone, may be minor, but together may represent a substantial adverse change. However, after analysis, no cumulative impact to visual/aesthetic resources will occur. The following paragraphs explain why:

There are no probable future projects within the immediate vicinity of the proposed Soscol Flyover Project. The effects of past and present projects on visual quality/aesthetics are reflected in the existing visual conditions and were taken into account in the visual impact assessment of the proposed flyover. Some foreseeable future development projects are planned in the expanded RSA for cumulative visual/aesthetic impacts. They would be visible to some degree from state highways

as well as other places accessible to the public. The information available on these projects was reviewed and the proposed sites were examined for their visual exposure.

The future Napa Pipe Project proposes to redevelop a former, now abandoned, industrial site with a proposed phased development consisting of a high density residential neighborhood featuring low-rise and mid-rise housing, public open space, neighborhood-serving retail and restaurants, a condominium hotel and a business park with research and development, light industrial/warehousing and office space. The proposed project would be seen within the context of existing development and the Napa River. The Napa Pipe Project Draft Environmental Impact Report found that the project would have a beneficial impact on the existing visual quality of the site, which currently is in a degraded state. It also found that the project would not contribute to significant cumulative impacts related to aesthetics.

The future St. Regis Parcel at Stanley Ranch Project is located west of SR 29 and south of SR 12/121. The site is currently a vineyard. It is near but not directly adjacent to SR 29. The planned project would consist of a 150-room destination hotel/resort and associated infrastructure located on 95 acres of the 712-acre Stanley Ranch. It would retain some vineyards that exist on the site. An earth berm and a sparse row of eucalyptus trees along the west side of SR 29 constrain views of the proposed development site from the highway, although some evidence of the project would likely be seen.

Other future planned projects within the cumulative visual/aesthetic impacts RSA include expansion of some existing vineyards or establishment of new ones. Vineyards are very much a familiar and valued feature of the Napa landscape. It is expected that such projects would contribute to the valued landscape character of the area.

As stated above, the additional vineyards and redevelopment at Napa Pipe were both identified as positively contributing to the existing visual environment. The addition of a hotel at the Stanley Ranch project site would add a new manmade

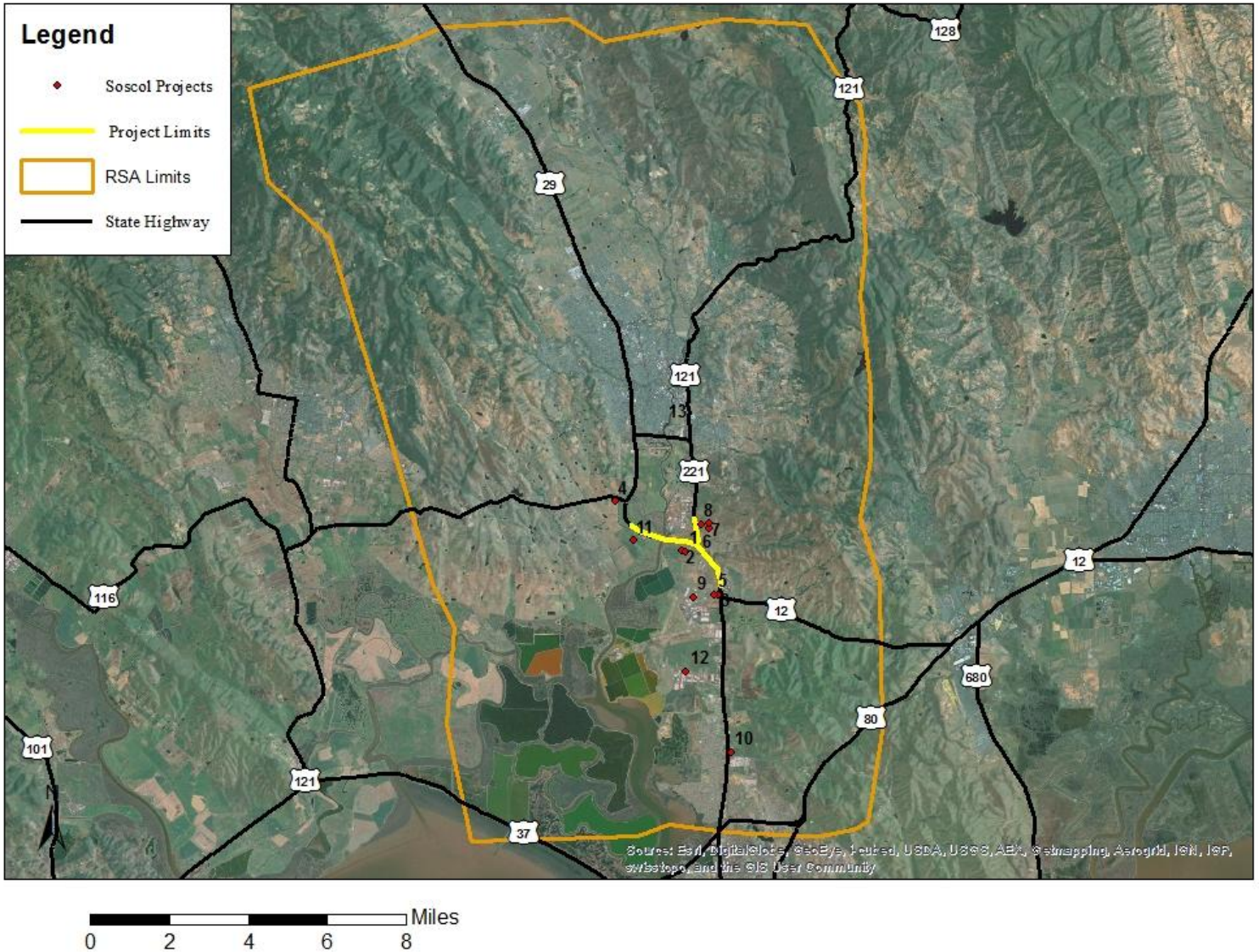
structure that would not be visible at the immediate Soscol Junction project site, but some evidence of the Stanley Ranch project would likely be seen within the expanded RSA. The combination of these projects and the moderate-low to moderate impacts identified in Section 2.1.8 for the Soscol Junction project are not anticipated to result in a considerable cumulative impact to visual resources.

Cultural Resources (Archaeological and Architectural History)

Geographic Study Area

The Resource Study Area (RSA) for cultural resources is the southern Napa River watershed. The southern Napa watershed includes a number of small tributary creeks and is roughly defined on the north by Milliken Creek and reservoir, Salvador and Pickle Creeks, to the east by Murphy and Spencer Creeks, to the south the lower limits of the Napa River, and Huichica Creek to the west. Below, Figure 2-19, is a map of the RSA.

Figure 2-19 Resource Study Area for Cultural Resources



Resource Trends, Health and History

The southern Napa River watershed has been subject to a substantial number of archaeological research investigations over the past eight decades. Previous research has identified a range of prehistoric sites in this area including large residential sites, such as ethnographic villages, quarries, and other task-specific archaeological sites, in addition to a number of historic archaeological sites both buried and on the ground surface. The exact number of resources present within this watershed is unknown at this time but most likely is in excess of a hundred sites. While parts of the watershed have been heavily surveyed, there is the chance with any project in this type of environment to discover unrecorded buried and surface sites.

Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

As indicated in the Cultural Resources Section 2.1.9, the project APE contains two historic properties previously listed or determined eligible for the National Register of Historic Places (NRHP). Soscol House will not be impacted by the project. The second resource is Archaeological site CA-NAP-15H. The removal of portions of the archaeological site would have an incremental impact on the preservation of archaeological sites within the Southern Napa River watershed. Each of the projects listed in Table 2-28, have identified impacts to archaeological resources in the Southern Napa River watershed. These related projects in the area and other development in the county could result in the progressive degradation and loss of identified and unidentified (as yet unrecorded) resources. None of the other projects were determined to directly or indirectly create or increase impacts within the Soscol Junction project area from ground disturbance (i.e., road building or excavation). Therefore, no further direct or indirect adverse impacts to CA-NAP-15H would be expected to occur as a result of the projects reviewed.

The proposed Soscol Junction project includes mitigation measures (excavation, reporting, and use of temporary fencing to protect portions of the site) at CA-NAP-

15H that would moderate the projects' contribution to the loss of archaeological information on Southern Napa River watershed cultural resources. Similar mitigation measures may also be implemented for other related projects that have the potential to affect cultural resources.

Table 2-28 Projects Evaluated for Cumulative Analysis for Cultural Resources

Map Key	Project and Location	Project Type	Document Type	Project Status
2	Montalcino at Napa Resort Hotel (71.77 acres) Devlin Rd	Commercial	EIR	Approved
3	Montalcino at Napa Golf Course (233 acres) Devlin Rd, Soscol Ferry Rd	Recreation	Supplemental EIR	Approved
6	St. Regis Parcel at Stanly Ranch (93 acres) Stanly Lane & Hwy 12/121	Commercial	EIR	Approved
7	Hussey Ranch (Hidden Hills) Subdivision (87.7 acres) 1061 Patrick Rd at Broadmoor Road	Residential	EIR	Under Construction, 50% Completed
11	Napa Pipe Redevelopment (154 acres) Northwest of the SR 121/29 junction	Mixed Use	EIR	Approved
14	Mondavi Vineyards (101 acres) East side of SR 221/ Napa-Vallejo Hwy	Agricultural	MND	Completed
16	Arroyo Creek Vineyard (32.2 acres) East of SR 221/Kaiser Rd Intersection	Agricultural	ND	Completed
17	Suscol Ranch – JPV – Vineyards (29.61 acres) Northeast of SR 221/Kaiser Rd	Agricultural	ND	Completed
20	Vintage Ranch (18.3 acres) SR 29 & Donaldson Way	Residential & Parkland	ND	Under Construction
21	Stanly Ranch Vineyards (708 acres) Stanly Lane	Mixed Use	ND	Completed
23	Lombard Crossing Industrial Park (25 acres) Northeast corner of American Canyon Rd and SR 29	Industrial	MND	Approved
25	Biagi Brothers Jackson Wine Estate Distribution Warehouse Green Island Rd & Jim Oswalt Way	Industrial	MND	Under Construction

26	River Park Marina Bank Maintenance Repairs Cabot Way, Marina Dr, S. Jefferson St, River Park Blvd	Other	MND	Completed

Air Quality

Geographic Study Area

The project is located in Napa County, within the San Francisco Bay Area Air Basin. Below, Figure 2-20 is the resource study area map obtained from the California Air Resource Board (the red line displays the boundary)

Figure 2-20 Resource Study Area for Air Quality

Resource Trends, Health and History

The climate of the San Francisco Bay Area has mild, wet winters and relatively warm, dry summers. The major climate controls are the Pacific high-pressure over the eastern Pacific Ocean, the Pacific Ocean and the local topography. The formation of a high-pressure area over the Great Basin Region to the east also affects the meteorology of the Bay Area, primarily during the winter months. Daytime temperatures in the summer average near 80 degrees Fahrenheit (ºF), with temperatures dropping into the 50's by

morning. Sunshine is plentiful in the summer, with clear skies most of the time. In winter, temperatures vary little, with high temperatures in the mid 50's. Winter lows drop to the low 30's.

Air Quality in the project area changes mainly due to two factors: vehicle emissions and meteorological conditions. The meteorological conditions such as mixing height, atmospheric stability, and wind speed all affect the atmosphere's or environment's ability to mix or dilute pollutants. Sunlight affects photochemical oxidant production. Atmospheric conditions are typically the cause of short-term variations in air quality while pollutant emission rates typically cause the long-term variations.

The San Francisco Bay Area is considered to be one of the cleanest metropolitan areas in the country with respect to air quality. However, the Bay Area as a whole does not meet State or Federal ambient air quality standards for ground level O3 and PM2.5 and State standards for PM10. For all other pollutants, the area complies with Federal and State air quality standards.

Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

Although there are numerous past, present, and foreseeable projects in the resource study area, only the Napa Pipe Project was analyzed in detail due to its size and proximity to the proposed project. Qualitative analyses were conducted to estimate the $PM_{2.5}$ and PM_{10} emissions for the project's 2008 baseline, the 2019 opening year and the 2039 design year conditions under various project alternatives, either with or without the proposed Napa Pipe Project in place. Emission rates were calculated by using the computer model CT-EMFAC 5 (based on EMFAC2011) which was released by Caltrans for project-level assessments in California. Temporary construction impacts were not considered, because they will be avoided and minimized, as described in Section 2.2.6.

Discussed below are emissions from the project with and without the construction of the Napa Pipe Project:

The total $PM_{2.5}$ and PM_{10} emissions generated by the project, in pounds per day, are the product of the VMT and the composite emission rates of all vehicles traveling on the facility. The emission rate corresponding to the average speed of traffic either in the peak or non-peak periods was used.

Table 2-29 Total Project $PM_{2.5}$ Emissions (pounds/day)

Project PM2.5 Emissions, in pounds/day					
		2019		2039	
Alternatives	2008	w/o Napa Pipe	w/ Napa Pipe	w/o Napa Pipe	w/ Napa Pipe
Existing	10.5	-	-	-	-
No-Build	-	7.6	7.6	9.0	9.2
Build - Alt 5 Opt 1	-	7.5	7.5	8.8	9.0
Build - Alt 5 Opt 2	-	7.5	7.6	8.8	9.0

Due to regional growth, traffic volumes throughout the project area will increase in the design year, which will raise the VMT under all the future Build and No-Build Alternatives over the baseline level. The analysis shows the amount of $PM_{2.5}$ emissions within the project area in 2039 will decrease from the baseline level of 2008 under all project alternatives, including the No-Build. It demonstrates that the reduction in the emissions rates of $PM_{2.5}$ over time will more than compensate for the increase of VMT in the design year.

Either Options 1 or 2 of the Build Alternatives will produce less total $PM_{2.5}$ emissions when compared with the No-Build in the design year. While both Build Alternatives will significantly improve traffic operations at the Junction, they will only cause slight reductions in $PM_{2.5}$ emissions over the level for the No-Build, because the emission rates in the design year vary in a narrow range at different speeds.

The proposed Napa Pipe Project will raise the emissions of $PM_{2.5}$ slightly in the project area in the design year 2039, but will not change the overall trend of decreasing from the baseline level.

Table 2-30 below shows the estimated total daily PM_{10} emissions within the project area under various scenarios.

Table 2-30 Total Project PM_{10} Emissions (pounds/day)

Alternatives	PM_{10} Emissions, pounds/day				
	2008	2019		2039	
		w/o Napa Pipe	w/ Napa Pipe	w/o Napa Pipe	w/ Napa Pipe
Existing	19.3	-	-	-	-
No-Build	-	16.8	16.9	20.1	20.5
Build - Alt 5 Opt 1	-	16.7	16.8	19.9	20.3
Build - Alt 5 Opt 2	-	16.7	16.9	19.9	20.3

The results indicate that the amounts of PM_{10} emissions within the project area in year 2019 will decrease from the baseline level under all project alternatives because PM_{10} emissions rates would be lowered from the baseline year. The growth of VMT, however, would raise the total PM_{10} emissions in year 2039 over the baseline level under all project alternatives.

When the Napa Pipe Project is taken into consideration, VMT will increase slightly, however predicted VMT will still be same for no-build conditions in both 2019 and 2039. The conclusions of this discussion are not affected when the Napa Pipe Project is taken into consideration.

The construction of the proposed junction project will improve the traffic operations with and without the Napa Pipe Project. However, it won't result in a substantial change vehicle miles traveled (VMT) or vehicle hours traveled (VHT) in a regional context.

Table 2-31 below illustrates the CO_2 emissions estimated by Caltrans in the following conditions: 2008 baseline; 2039 no-build with and without the Napa Pipe Project; and 2039 build - alternative 5, option 1 and option 2 with and without the inclusion of the Napa Pipe Project additional traffic.

Table 2-31 Soscol Junction Total VMT (Vehicle Miles Traveled)

Project Total VMT, vehicle-miles traveled					
		2019		2039	
Alternatives	2008	w/o Napa Pipe	w/ Napa Pipe	w/o Napa Pipe	w/ Napa Pipe
Existing	126,700	-	-	-	-
No-Build	-	137,200	138,950	164,500	168,000
Build - Alt 5 Opt 1	-	137,200	138,950	164,500	168,000
Build - Alt 5 Opt 2	-	137,200	138,950	164,500	168,000

Table 2-32 Project CO2 Emissions, US tons/day

Project CO_2 Emissions, US tons/day					
		2019		2039	
Alternatives	2008	w/o Napa Pipe	w/ Napa Pipe	w/o Napa Pipe	w/ Napa Pipe
Existing	60.4	-	-	-	-
No-Build	-	53.0	53.4	64.8	66.9
Build - Alt 5 Opt 1	-	50.2	50.0	55.8	57.3
Build - Alt 5 Opt 2	-	49.8	50.4	55.3	56.7

The results indicate that the CO_2 daily emissions are expected to increase 4.4 tons/day by the year 2039 if the proposed project is not constructed without Napa Pipe and increase 6.5 tons/day with Napa Pipe. In comparison to the baseline, if the proposed project is constructed, the daily CO_2 emissions are expected in 2039 to decrease by 4.6 tons/day for Alternative 5, Option 1 without Napa Pipe Project; decrease 5.1 tons/day for Alternative 5, Option 2 without Napa Pipe Project; decrease 3.1 tons/day for Alternative 5, Option 1 with Napa Pipe Project; and a 3.7 tons/day decrease for Alternative 5, Option 2 with Napa Pipe Project.

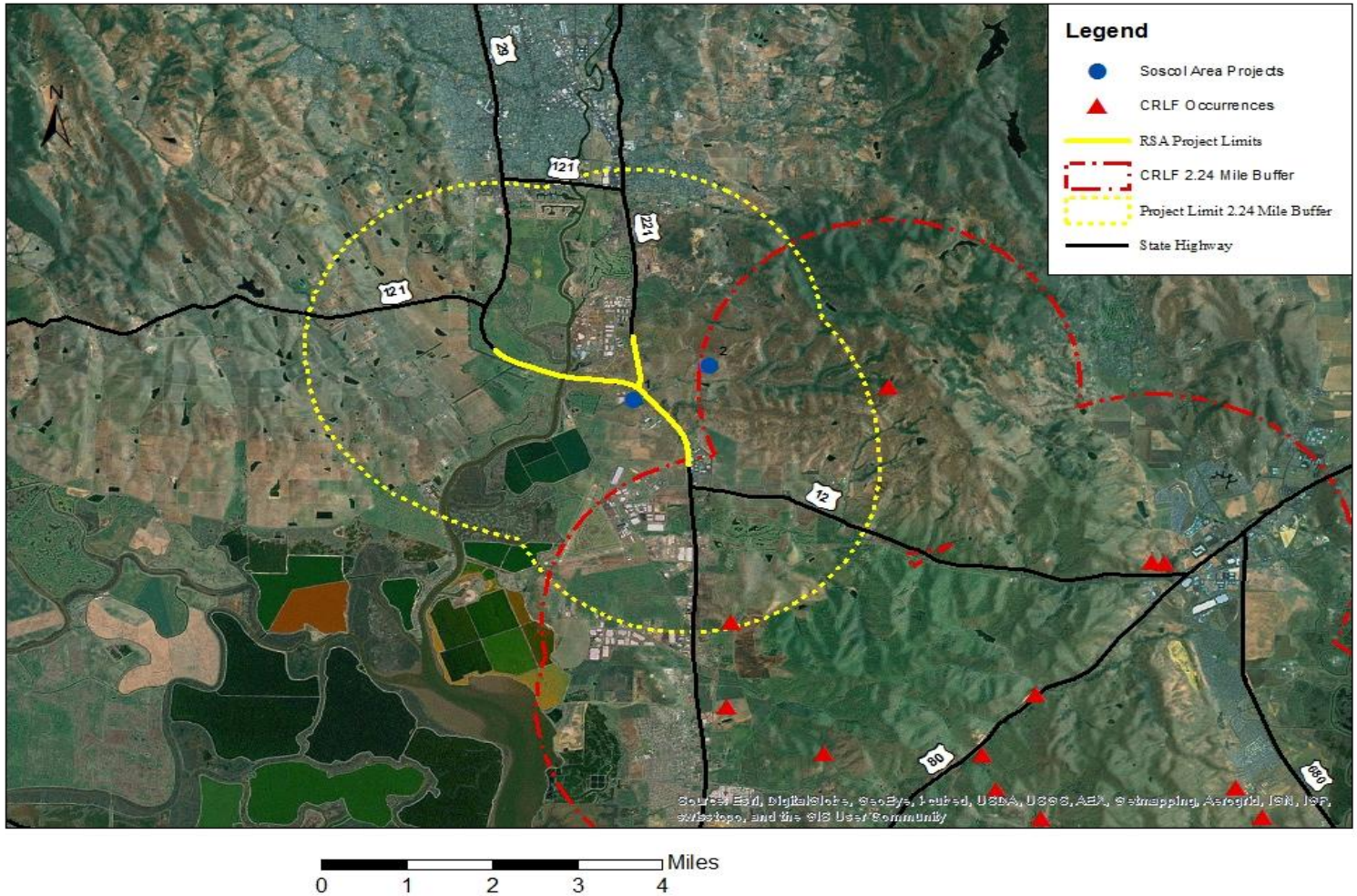
In conclusion, with or without Napa Pipe Project, air quality changes in the project area are not expected to have a cumulative impact.

California red-legged frog (CRLF)

Geographic Study Area

The geographic context for CRLF includes the current range distribution as designated by the USFWS. This includes the American Canyon watersheds (Fagan-Jameson Canyon – Lower Napa River), located just south of SR 12 and on the east side of SR 29. For the purpose of this analysis, a 2.24-mile Resource Study Area (RSA) buffer was established around the project limits to evaluate any cumulative effects to the CRLF. As discussed in the Natural Environment Study (NES) that was prepared for this project, CRLF dispersal habitat refers to accessible upland or riparian habitat within and between occupied or previously occupied sites. CRLF are known to disperse up to 2.24 miles of breeding sites. A 2.24 mile buffer around the project limits was implemented to adequately analyze any potential direct or indirect cumulative effects from the proposed project and other projects in the area to CRLF dispersing to or from potential suitable breeding sites. Two projects were identified within the RSA limits during the analysis to potentially have cumulative effects to CRLF. The RSA limits are depicted in Figure 2-21 below:

Figure 2-21 Resource Study Area for CRLF



Resource Trends, Health and History

The CRLF is federally listed as threatened and is a state species of concern. The status of CRLF under federal and state provisions indicates it is experiencing cumulative impacts.

CRLF is the largest native frog found in the western United States. The CRLF requires habitat that consists of both aquatic and riparian elements. CRLF are found primarily in wetlands and streams in the coastal drainages of Central California.

Adults use dense, shrubby, or emergent vegetation closely associated with deepwater pools with fringes of cattails and dense stands of overhanging vegetation. The shrubby riparian vegetation that structurally seems to be most suitable for CRLF is that provided by arroyo willow. However, cattails (*Typha* sp.) and bulrushes (*Scirpus* spp.) also provide suitable habitat.

The reasons for the decline of CRLF are multifaceted and include predation by the exotic bullfrog (*Rana catesbeiana*) introduced and predatory fishes such as sunfish (*Lepomis* sp.), habitat alteration, the over harvest of frogs in the 19th century, air and water pollution, solar radiation, pathogens, and parasites.

CRLF was assumed to be potentially present in the BSA due to the findings of a site assessment which documented the presence of habitat suitable to support CRLF. The project is located within the known range of CRLF, and there are recorded observations of the species within the project area.

Within the BSA, habitat at the three perennial creek sites: Suscol Creek; the tributary to Sheehy Creek, and Sheehy Creek; provide the highest potential for CRLF breeding. These three sites are within the historical range for CRLF, contain near-year round water for basic behavioral requirements and larval development, and include ample vegetation for egg mass deposits and cover.

The study area overlaps with USFWS CRLF core recovery area 15. Core recovery areas represent a system of areas that, when protected or managed for CRLF, will allow for long-term viability of existing populations and re-establishment of populations within the historical range. CRLF core recovery areas are selected because they represent viable populations or because the location contributes to the connectivity of habitat and would increase dispersal opportunities between populations.

The USFWS assigned the Fagan-Jameson Canyon-Lower Napa River location as a core area based on the following:

- This area is considered currently occupied by CRLF.
- This area supports a source population of CRLF.
- This location provides connectivity between known populations of CRLF.

The USFWS recently approved an expansion of CRLF critical habitat in Solano County to include portions of CRLF core recovery area 15 in 2010. Thus critical habitat unit SOL-2 is now located approximately 1.75 mi east of the Soscol Flyover project area (USFWS 2010).

The Soscol Junction Project area is located near suitable aquatic CRLF breeding habitat in the form of at least three high-quality perennial drainages. Additionally, given the overlap of CRLF Core Recovery Area 15 and the eastern limits of the study area, it is reasonable to conclude that the BSA potentially could be within suitable CRLF upland aestivation and movement habitat.

<u>Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures</u>

For the purpose of this analysis, two projects were identified within project the area and evaluated as part of the cumulative impact analysis for the CRLF. Table 2-33 lists the two projects that were evaluated as part of the cumulative impact analysis for CRLF. Both of the projects on Table 2-33 would result in impacts to CRLF upland habitat but neither would result in impacts to CRLF aquatic habitat. The other 24 projects (from

Table 2-2) evaluated were dismissed from further analysis because the available information was lacking thereby requiring speculation about potential impacts and no quantifiable impacts were identified involving CRLF.

Since none of the projects from Table 2-2 or Table 2-33, would affect CRLF aquatic habitat, no cumulative impacts are anticipated in this regard.

Table 2-33 Projects Evaluated for Cumulative Impacts to CRLF in the Study Area

Map Key	Project and Location	Project Type	Document Type	Project Status
1	Devlin Road Extension & Sheriff Station Southeast of Devlin Rd/ Soscol Ferry Rd junction	Transportation, Industrial	ND	Completed
2	Suscol Mountain Vineyards (568 acres) Approximately 1 mile east of Hwy 221, and 1 mile north of Hwy 12	Industrial, Agricultural	EIR	DEIR currently being circulated
Note: The map key for Table 2-33 corresponds to Figure 2-21				

The Devlin Road Extension Project was found to have a potentially significant effect on CRLF within the RSA. The project involved the extension of Devlin Road in the City of American Canyon in an area located within known occurrences of CRLF. An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for this project. The project area was not located within designated critical habitat for CRLF. However, based on the findings of USFWS protocol surveys suitable dispersal habitat was found within the project footprint and known occurrences of CRLF were documented within 1.5 miles of the project footprint. Potential “take” of CRLF was identified in the document based on the suitable dispersal habitat that would be adversely affected as a result of the project being built unless mitigation was incorporated. During the public circulation of the environmental document, CDFW expressed concerns in their comments on the project regarding the adequacy of the mitigation measures provided for impacts to

CRLF upland habitat (CDFW 2013). The project applicant was instructed by CDFW to contact USFWS, implement additional prudent mitigation measures to reduce potentially significant impacts to CRLF, and possibly obtain a USFWS Incidental Take Permit (ITP) if “take” of CRLF was likely to occur. The IS/MND specifies that the project would permanently impact approximately 0.14 acres of riparian woodland habitat, which would be considered suitable upland habitat for CRLF. Additional information specific to the Devlin Road Extension project was not made available to Caltrans during the time of the analysis.

The other project that was evaluated within the RSA is the Suscol Mountain Vineyard Project. The project site is located approximately 2.5 miles southeast of the City of Napa in Napa County. The Draft EIR for this project is currently being circulated for public review. The Suscol Mountain Vineyard project would develop approximately 561.0 acres of new vineyards on the 2,123.0 acre Suscol Mountain Vineyard property. The project would consist of vegetation removal and earth moving and grading activities associated with soil cultivation, installation and maintenance of drainage and erosion control features, and vineyard planting. The project was identified to have potentially significant impacts to CRLF under CEQA. After the project applicant incorporated prudent mitigation measures, the project would be determined to still permanently impact approximately 0.09 acres of CRF upland habitat as a result of converting the existing land to vineyards after incorporating mitigation. The project applicant has implemented additional mitigation measures in the environmental document to rectify permanent impacts from the project to suitable upland habitat for CRLF including habitat restoration and enhancement measures.

On the Soscol Junction project, as discussed in the NES, the Option 1 Alternative would result in 8.95 acres of permanent impacts to suitable upland habitat for CRLF, and Option 2 would result in 8.89 acres of permanent impacts to CRLF upland habitat (NES 2013). Table 2-34 listed below shows the amount of permanent impacts to CRLF upland habitat the two different build alternatives (Option 1 and 2) would have in combination with the other projects evaluated with permanent impacts to CRLF upland habitat. The

Soscol Flyover project would not contribute to stressors to CRLF or its designated critical habitat. As discussed in the NES, the Soscol Flyover project impacts will mostly occur to upland dispersal habitat directly adjacent to the high traffic roadways.

Table 2-34 Permanent Impacts to CRLF Upland Habitat from Proposed Project and Other Projects Evaluated

Project Name	CRLF Upland Habitat Impacts (ac)		Project Name	CRLF Upland Habitat Impacts (ac)
Proposed Project (Option 1)	8.95		Proposed Project (Option 2)	8.89
Devlin Road Extension	0.14		Devlin Road Extension	0.14
Suscol Mountain Vineyard	0.09		Suscol Mountain Vineyard	0.09
TOTAL	9.18		**TOTAL**	9.12

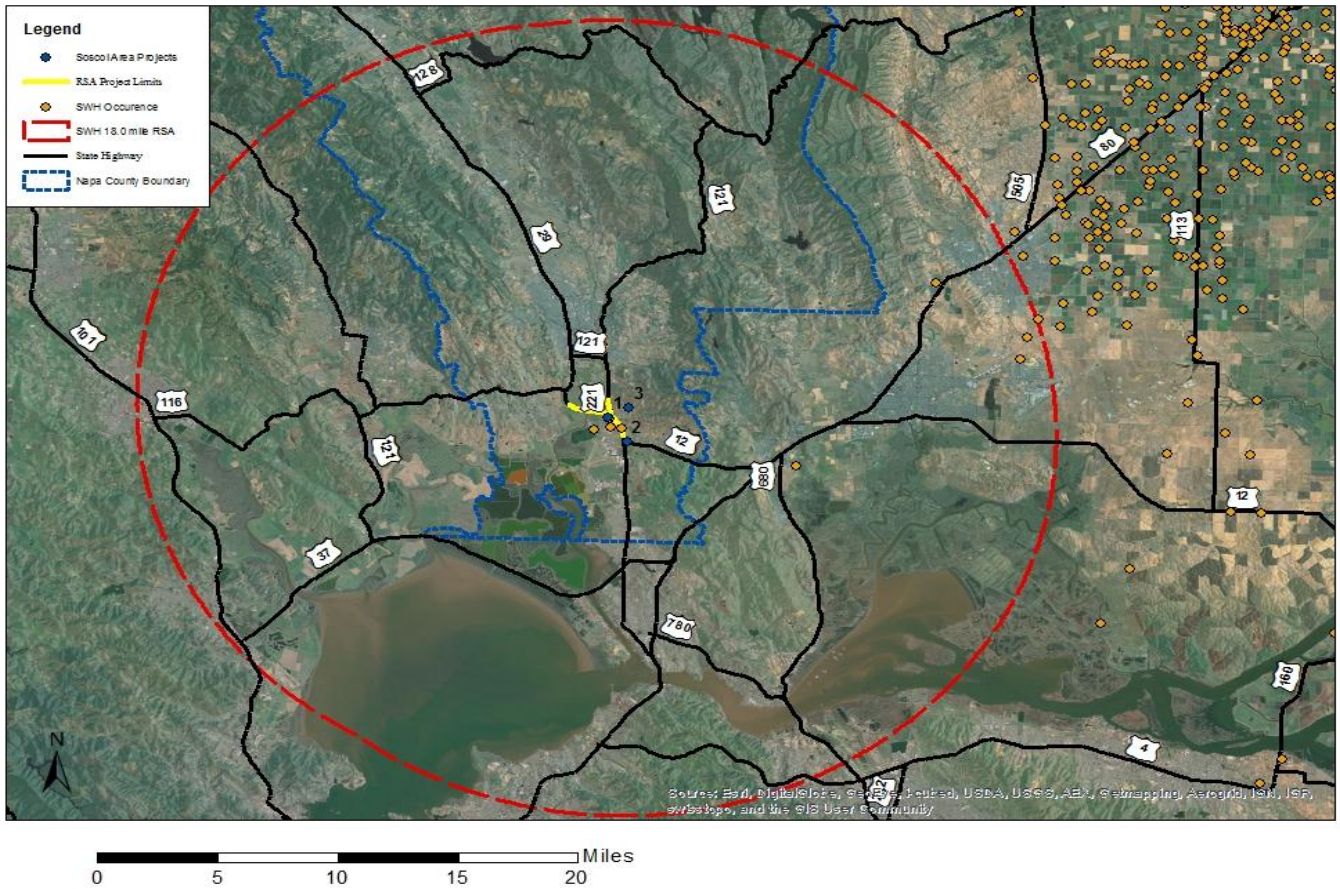
For Option 1, the proposed Soscol Flyover project along with other two projects evaluated would result in a cumulative total of 9.18 acres of permanent impacts to CRLF upland habitat. For Option 2, the proposed Soscol Flyover project along with the other two projects evaluated would result in a cumulative total of 9.12 acres of permanent impacts to CRLF upland habitat. The Soscol Junction Project's contribution to CRLF upland habitat impacts under either Option 1 or Option 2 would be considerable. Caltrans has incorporated a number of avoidance and minimization measures into the proposed project to reduce impacts to CRLF and these are discussed in Chapter 2. To offset permanent impacts to CRLF upland habitat, Caltrans proposes to mitigate at a 3:1 ratio (NES 2013). Final mitigation will be determined during formal consultation with the USFWS.

Swainson's hawk (SWHA)

Geographic Study Area

The historical range distribution for SWHA encompasses a large majority of the State including the Central Valley, portions of the Bay Area, Central Coast, and Southern California as designated by CDFW. SWHA Inventory Studies have recently been updated to include the SWHA historical range and portions of the historical range that are dense, moderately dense, and sparse. The historical range includes the majority of Napa County; however, there are no current populations classified as dense, moderately dense, or sparse distributions of the SWHA within Napa County (CDFW 2007). SWHA have been recorded using in excess of 15,000 acres (ac) of habitat and ranging up to 18.0 miles from the nest in search of prey (Estep 1989, Babcock 1993, CDFW 1994). For the purpose of this analysis, an 18.0-mile Resource Study Area (RSA) buffer was established around the project limits to evaluate any cumulative effects on SWHA. The rationale of using an 18.0-mile RSA to evaluate cumulative effects was selected based on the SWHA's capability of ranging up to 18.0-miles in search of prey from active nests. Figure 2-22 depicts the RSA limits used for the cumulative impact analysis for SWHA.

Figure 2-22 Resource Study Area for Swainson's hawk



Resource Trends, Health and History

The Swainson's hawk is listed as threatened by the CDFW under CESA. Approximately 95 percent of SWHA exist in the Central Valley. Human population increases and urbanization in Swainson's hawk habitat are considered the primary contributing factors to the modification and loss of SWHA habitat (CDFW 2007). As discussed in the NES for this project, SWHA require large, open grasslands with suitable prey and suitable trees for nests. In California, SWHA typically forage over grassland or farmland habitat with a preference for alfalfa crops (CDFW 1994). SWHA typically nest in tall trees within riparian areas or in groves or single large trees surrounded by suitable foraging habitat (CDFW 1994). In the California Central Valley, common nest trees include Eucalyptus, walnut (*Juglans* spp,), oak, cottonwood (*Populus spp*.), and willow (*Salix spp.*) (Resseguie 2007).

Swainson's hawks in Solano and Yolo Counties nested in a variety of habitat contexts (Resseguie 2007). Out of 449 nests discovered, most nests were found along roadsides (35%), or within farmsteads (33%) and pasture/cropland (19%). The remainder of nests occurred in riparian areas (5%), within woodland or tree groves (5%), and areas classified as urban (4%). Because the nest surveys were opportunistic, the author cautions against using the data to demonstrate SWHA nest habitat preferences (Resseguie 2007). However, the data does demonstrate that SWHA nest in a wide variety of habitat contexts, and that the loss of one type of habitat around nest sites may not preclude hawks from nesting elsewhere within a typical home range. However, the type of tree used for nesting is greatly influenced by the types of trees available, no inference can be drawn about preferences of SWHA for tree types or site types from surveys of this sort.

The Resseguie (2007) nest survey that was conducted (449 total nests) found that the most common trees used in the Central Valley included walnut (*Juglans* spp., 26% of nests), Eucalyptus (*Eucalyptus* spp., 21% of nests), and oak (*Quercus* spp., 10% of nests). Across the state of California, a CDFW study found that the most common nest

trees include valley oak (*Quercus lobata*), cottonwood (*Populus* spp.), Eucalyptus, and willow (*Salix* spp.) (CDFW 2007). Of these nests, the mean nest tree height in 2005 and 2006 was 53.1 and 48.6 ft, respectively, and mean nest height was 43.4 and 38.9 ft, respectively (CDFW 2007). In the City of Davis, CA, Swainson's hawk nest trees were taller than a random sample of the tallest trees in 20-45 year-old suburban neighborhoods, but not in neighborhoods > 45 years of age (England et al. 1995). Hawks nested the most in neighborhoods >45 years in age presumably due to the availability of more mature landscaping (England et al. 1995). These previously mentioned studies indicate that the SWHA have preferences for both tree species and tree height when selecting a nesting site.

As discussed in the NES, four historic Swainson's hawk nests occur within 0.8 miles or less of the Biological Study Area (CNDDB # 1619, 1717, 1718, 1719, CDFW 2013). The latest documented activity at the nests was from 2008 (CNDDB # 1717, 1718, CDFW 2013).

Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

Table 2-35 lists the three projects that were identified within the RSA limits and evaluated for cumulative impacts to the Swainson's hawk (SWHA). Another 31 projects evaluated were dismissed from further analysis because available information was lacking thereby requiring speculation about potential impacts and no quantifiable impacts were identified involving SWHA. This information is documented in the project file and can be viewed by contacting Yolanda Rivas, District 4, Office of Environmental Analysis.

Table 2-35 Projects Evaluated for Cumulative Impacts to SWHA in Study Area

Map	Project and Location	Project Type	Document Type	Project Status
1	Jameson Canyon Widening Project Napa County – SR 12 KP 0.4/5.3 (PM 0.2/3.3) Solano County – SR 12 KP 0.0/R4.2 (PM 0.0/R2.6) & State Routes 29/12 Interchange Project Napa County – SR 29 KP 6.7/8.7 (PM 4.2/5.4) & SR 12 KP 0.0/0.4 (PM 0.0/0.2)	Transportation	MND	Approved Undergoing Revalidation
2	Suscol Mountain Vineyards (568 acres) Approximately 1 mile east of Hwy 221, and 1 mile north of Hwy 12	Industrial, Agricultural	EIR	DEIR currently being circulated
3	Devlin Road Extension & Sheriff Station Southeast of Devlin Rd/ Soscol Ferry Rd junction	Transportation, Industrial	ND	Completed

The Devlin Road Extension Project was one of the projects evaluated that was found to have potentially significant impacts to SWHA under CEQA. An Initial Study/Mitigated Negative Declaration (IS/MND) was prepared for this project that involved the extension of Devlin Road which is located just to the south of the proposed Soscol Junction Project. During the public circulation of the IS/MND, CDFW commented on the project in regards to adequately addressing project impacts to SWHA foraging habitat and incorporating necessary mitigation. The project would remove approximately 1.0 acre of foraging habitat (CDFW 2013). As required by CDFW, the project applicant was requested to incorporate mitigation to reduce permanent impacts SWHA foraging habitat. That project did not discuss any impacts to SWHA nesting habitat or provide specifics on trees being removed as a result of the project being built.

The Suscol Mountain Vineyards was the second project evaluated that had potentially significant impacts under CEQA. The project site is located approximately 2.5 miles southeast of the City of Napa in Napa County. The Draft EIR for this project is currently being circulated for public review. The Suscol Mountain Vineyard project would develop approximately 561.0 acres of new vineyards on the 2,123.0 acre Suscol Mountain Vineyard property. The project would consist of vegetation removal and earth moving and grading activities associated with soil cultivation, installation and maintenance of drainage and erosion control features, and vineyard planting. The project was determined to have potentially significant impacts under CEQA that would result from the project converting 527.8 acres of wild oat dominated grassland to vineyards. Wild oat-dominated grassland is considered to be suitable foraging habitat for SWHA. The project applicant has developed a Restoration Management Plan (RMP) that would replace 1, 014.2 acres of native grassland habitat to address permanent impacts to SWHA foraging habitat. This project would also permanently impact approximately 1,247 trees (29.8 acres) of coastal live oak woodland habitat. The DEIR infers that portions of these ridge top coast live oak woodland trees could potentially be suitable nesting sites for SWHA. Based on previous nesting surveys conducted for SWHA, 449 nests were in woodland or tree groves (Resseguie 2007). Although this study was not controlled by habitat type, it is a reasonable assumption that not all of these trees (29.8 acres) being removed are suitable nesting habitat for SWHA. Detailed scientific analysis of Swainson's hawk microhabitat characteristics is currently lacking, but it is likely that only a subset of the trees removed by this project would actually provide suitable nest sites for the SWHA. Tree heights were not recorded during the tree surveys that were completed for this project.

The State Route 12 (SR 12) Jameson Canyon Widening & SR 29/12 Interchanges Project was the last project evaluated that had potentially significant impacts to SWHA under CEQA. The project involved widening the two-lane conventional highway SR 12 to a four lane conventional highway and upgrading the SR 29/SR 12 Intersection to a new interchange. An Initial Study/Mitigated Negative Declaration (IS/MND) and Environmental Assessment (EA) were completed for this project by Caltrans in 2008.

The project is now under construction. The project did not involve any impacts to SWHA foraging habitat. However, the project did involve potentially significant impacts, under CEQA, to suitable nesting habitat for SWHA as a result from tree removals. Caltrans implemented prudent avoidance and minimization measures to reduce the impacts to SWHA including the removal of trees outside the nesting season (February 15-September 1). No SWHA nests or occurrences were recorded within the project footprint. The project's permanent impacts involved the removal of 547 trees consisting of mostly coast live oak woodland and willow riparian habitat. Specific tree removal counts by tree types, tree height, and DBH were not stated in the document. As discussed previously, previous nesting surveys conducted for SWHA showed that only 5% of the 449 nests discovered were found nesting in woodland or tree groves (Resseguie 2007). Therefore, it is a reasonable assumption that only a subset of the trees removed by the project were suitable nesting habitat for SWHA.

Foraging Analysis

The maximum acreage for both permanent and temporary effects for Option 1 and 2 of the proposed Soscol Junction project is 22.71 and 23.66 ac, respectively. This would account for a maximum disturbance (i.e. 23.66 ac) of approximately 0.16% of potential foraging habitat based on published maximal foraging area (Estep 1989, Babcock 1993, CDFW 1994), and 0.24% based on mean foraging area (Babcock 1995). Table 2-36 below shows the total amount of suitable foraging habitat that would be impacted by both Option 1 and 2 of the proposed Soscol Flyover, and the other three projects evaluated that had potentially significant impacts to SWHA foraging habitat. The proposed Soscol Junction Project impacts for Option 1 and 2 include both temporary and permanent impacts (22.71 and 23.66 ac) to adequately analyze cumulative effects to SWHA foraging habitat. Caltrans would restore all areas temporarily affected by the proposed Soscol Flyover project to pre-project condition or similar. The proposed Soscol Flyover project's combined temporary and permanent effects (Option 2) would account for a maximum of 4.3% of the total amount of cumulative effects to SWHA foraging habitat. The Suscol Mountain Vineyard Project would account for the largest amount of impacts to SWHA foraging habitat (95.7%).

Table 2-36 SWHA Foraging Habitat Impacts from Proposed Project and Other Projects Evaluated

Project Name	Foraging Habitat Amount (ac)	Percentage of Total (%)		Project Name	Foraging Habitat Amount (ac)	Percentage of Total (%)
Soscol Project (Option 1)	22.71	4.2%		Soscol Project (Option 2)	23.66	4.3%
Devlin Road Extension	1.0	0.1%		Devlin Road Extension	1.0	0.1%
Suscol Mountain Vineyard	527.8	95.7%		Suscol Mountain Vineyard	527.8	95.6%
Jameson Canyon Widening & Interchange	0.0	0%		Jameson Canyon Widening & Interchange	0.0	0%
TOTAL	**551.51**	**100%**		**TOTAL**	**552.46**	**100%**

Approximately 76 trees will be impacted by the proposed project. Impacts would include tree removal or pruning to accommodate the flyover structure at Suscol Creek. Tree heights were not collected during project tree surveys, but diameter at breast height (DBH) was recorded for each tree during the survey. Of the 76 recorded trees, 16 (21%) have a DBH greater than 20 inches which may correlate to a potential tree height suitable for SWHA nesting. Detailed scientific analysis of Swainson's hawk nest microhabitat characteristics is currently lacking, but it is a reasonable assumption that only a subset of these 16 trees would actually provide suitable nest sites for SWHA. To date, no active or inactive raptor nest has been detected within the proposed project footprint (NES 2013). The analysis used for this project and other projects evaluated for nesting habitat impacts to SWHA is based on tree type and tree height information that may correlate to suitable nesting sites for SWHA to use. The Jameson Canyon and Devlin Road Extension projects that were evaluated did not specify tree heights and types in the environmental documents prepared. The Suscol Mountain Vineyard Project did quantify the total amount (1,247 trees) and types of trees being removed in the environmental document prepared. Tree heights were not specified in the EIR prepared

for the Suscol Mountain Vineyard Project. As mentioned above, it is highly unlikely that all of the 1,247 tress (29.8 acres) being removed by the Suscol Mountain Vineyard Project would be considered suitable nesting habitat for SWHA.

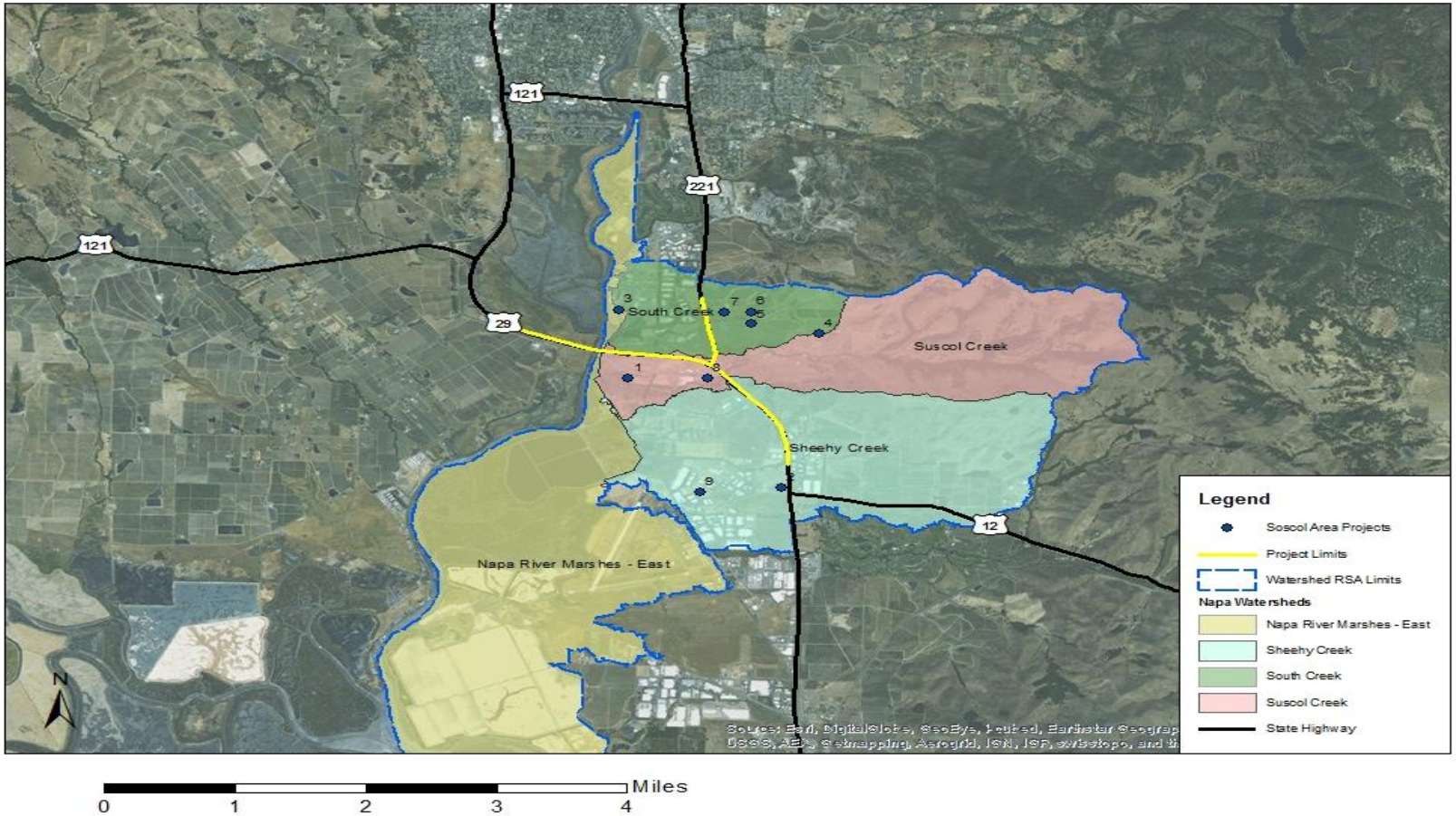
The proposed Soscol Junction project would not make a considerable contribution to the loss of nesting and/or foraging habitat for the SWHA. As discussed in the NES, Caltrans has implemented multiple prudent avoidance, minimization, and mitigation measures for impacts to SWHA that are discussed in Chapter 2 and in the NES completed for the proposed Soscol Junction Project. Based on the historical distribution range and population density, the most suitable habitat for the SWHA exists within the California Central Valley (CDFW 2007). As stated above, no active or inactive nests have been detected within the project limits (NES 2013). Caltrans would restore all areas that would be temporarily impacted by the construction of the proposed Soscol Flyover project to pre-project condition or similar to reduce loss of suitable foraging habitat for SWHA. The proposed Soscol Flyover Project would contribute a maximum of 23.66 acres (4.3%) out of all the projects evaluated for cumulative effects to SWHA foraging habitat. At this time, Caltrans is not proposing any compensatory mitigation. Given the negligible effects the proposed project would have on both nesting and foraging habitat for the SWHA, the proposed project will make no considerable contribution to cumulative impacts to SWHA.

Wetlands and Other Waters

RSA

The RSA considered for the wetlands and other waters cumulative impact analysis is shown in Figure 2-23 as subwatersheds South Creek, Suscol Creek, Sheehy Creek and Napa River Marshes-East.

Figure 2-23 Resource Study Area for Wetlands and Other Waters



Resource Trends, Health and History

Wetlands that comprise the RSA host a unique ecological community of several special status species, including those in the Soscol Junction project area: the California red-legged frog and Contra Costa goldfields. Additionally, thousands of migratory waterfowl and other bird species visit the watersheds during seasonal migrations along the Pacific flyway. The South Creek, Suscol Creek, and Sheehy Creek watersheds all flow into the Napa River watershed which historically was nearly all tidal salt marsh and tidal brackish marsh dominated by the hydrology of the lower Napa River.

Today, the majority of the wetlands in RSA are located in an area that is relatively undeveloped, apart from some agriculture, and the inactive salt ponds on the western side of the Napa River.

Over the past 150 years, humans have considerably altered the natural systems of Napa County undesirably by land use practices including floodplain changes, degraded water quality, importing exotic and invasive species and human disturbance in aquatic systems.

Since 1800, an estimated 6,500 acres of historical valley floor wetlands have been drained or filled. 19,700 acres of the watershed are now under hardened pavement or rooftops and another 26,000 acres have been used for agriculture.

It is extremely difficult to monitor changes in wetland areas due to uncertainties in both natural and human-caused factors. Natural events, including earthquakes, floods and fires and short- and long-term climate change can affect the distribution and acreage of wetlands. The overall trend has been toward a decline in wetlands due to urbanization and agricultural practices; however, the “no net loss” precedence, set forth by the EPA and U.S. Army Corp of Engineers, requires that present and future development replace any acreage of wetland or other waters lost at a minimum 1:1 ratio.

Discussion of Environmental Consequences and Avoidance, Minimization and/or Mitigation Measures

The National Wetland Inventory has mapped no perennial wetland features within the limits of the project area. Two ephemeral creeks, one south and one north of Suscol Creek, convey flows from the vicinity of the RSA to the west into the former salt evaporation ponds and the Napa River, respectively. Several small ephemeral swales and erosional drainages also occur throughout the project area and convey roadside and stormwater runoff into the adjacent grassland areas. These features do not appear to have any direct or indirect connections to other waters in the project vicinity, including the Napa River. However, there are seasonal wetlands located in the RSA. Table 2-37 summarizes the permanent and temporary direct impacts of the proposed project on seasonal wetlands and waters of the U.S. Mitigation for temporary impacts are proposed at a 1:1 ratio on-site. Indirect impacts are anticipated to occur.

Table 2-37 Wetland and "Waters" Impacted by the Project and Proposed Mitigation

Permanent Direct Impacts				
	Option 1		Option 2	
Wetland Type	Area Affected	Proposed Mitigation Area[1]	Area Affected	Proposed Mitigation Area[1]
Waters	0.01acre	0.01 acre	0.02 acre	0.02 acre
Wetlands	0.03 acre	0.03 acre	0.03 acre	0.03 acre
Temporary Direct Impacts				
	Option 1		Option 2	
Wetland Type	Area Affected	Proposed Mitigation Area[2]	Area Affected	Proposed Mitigation Area[2]
Waters	0.05 acre	0.05 acre	0.05 acre	0.05 acre
Wetlands	0.13 acre	0.13 acre	0.13 acre	0.13 acre

Notes:

[1] At 1:1 ratio off-site

[2] At 1:1 ratio on-site

Within the RSA, 10 projects were identified as having impacts to wetlands, listed in Table 2-38 below. Exact amount of impacts were not available, although a thorough search of the project documents was undertaken. It was found that every project on the list identified mitigation for any wetlands or other waters loss at a minimum of 1:1 ratio.

Table 2-38 Past, Present and Future Foreseeable Projects in the Resource Study Area

Map Key	Project and Location	Project Type	Document Type	Project Status
1	Suscol Creek Winery (10.32 acres) South side of Soscol Ferry Rd, west of Hwy 29	Industrial, Agricultural	ND	Approved
2	St. Regis Parcel at Stanly Ranch (93 acres) Stanly Lane & Hwy 12/121	Commercial	EIR	Approved
3	Napa Pipe Redevelopment (154 acres) Northwest of the SR 121/29 junction	Mixed Use	EIR	Final EIR Approved, General Plan Amendment Approved January 2014
4	Suscol Mountain Vineyards Erosion Control Plan(568 acres) Approximately 1 mile east of Hwy 221, and 1 mile north of Hwy 12	Industrial, Agricultural, Other	EIR	Draft EIR circulated (Notice of Availability filed April 2012)

Map Key	Project and Location	Project Type	Document Type	Project Status
5	Mondavi Vineyards (101 acres) East side of SR 221/ Napa-Vallejo Hwy	Agricultural	MND	Completed
6	Arroyo Creek Vineyard (32.2 acres) East of SR 221/Kaiser Rd Intersection	Agricultural	ND	Completed
7	Suscol Ranch – JPV – Vineyards (29.61 acres) Northeast of SR 221/Kaiser Rd	Agricultural	ND	Completed
8	Devlin Road Extension & Sheriff Station Southeast of Devlin Rd/ Soscol Ferry Rd junction	Transportation, Industrial	ND	Completed
9	The Village at Vintage Ranch (11.56 acres) Northeast corner of SR 29 & American Canyon Rd	Residential	ND	Approved
10	Lombard Crossing Industrial Park (25 acres) Northeast corner of American Canyon Rd and SR 29	Industrial	MND	Approved

The Soscol Junction Build Alternatives and the projects listed in Table 2-38 that affect wetlands and other waters have disclosed planned avoidance, minimization and/or mitigation measures to address the temporary and permanent effects; however, while Caltrans undertook efforts to procure the data, exact impact numbers for other projects are not available. The Soscol Junction Project would contribute toward the general decline of available wetland resources noted earlier in this chapter. The direct impacts are small (see Table 2-21), but could be cumulatively considerable against this historical backdrop. The wetlands within the project footprint are caused by roadway runoff; and, while some areas will be filled by the project, it is likely that new wetlands will form in low depression points in the future after project construction. In addition, none of the impacted wetlands are part of larger wetland complexes that may provide more complex ecological services..

Impacts to wetlands and other waters will be replaced at a 1:1 ratio at a minimum under USACE's "no net loss policy." Caltrans will obtain the appropriate USACE 404 Nationwide Permit prior to end of the Plans, Specifications, and Estimates (PS&E) phase of the project. Temporary impacts areas will be reseeded and regraded on-site to pre-project conditions at a 1:1 ratio. Caltrans will establish final permit requirements during the permitting process with USACE.

Caltrans will also obtain a National Clean Water Act 401 certification from the San Francisco Regional Water Quality Control Board (SFRWQCB).

Chapter 3 California Environmental Quality Act (CEQA) Evaluation

3.1.1 Determining Significance under CEQA

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

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

CEQA, on the other hand, does require Caltrans to identify each "<u>significant effect on the environment</u>" resulting from the project and ways to mitigate each significant effect. If the project may have a significant effect on any environmental resource, then an EIR must be prepared. Each and every significant effect on the environment must be

disclosed in the EIR and mitigated if feasible. In addition, the CEQA Guidelines list a number of mandatory findings of significance, which also require the preparation of an EIR. There are no types of actions under NEPA that parallel the findings of mandatory significance of CEQA. This chapter discusses the effects of the proposed project and CEQA significance.

Section 3.1.2 discusses the potential effects of the proposed project. The discussion in Section 3.1.2 is divided into sub-sections based on the level of effects. These sub-sections (Unavoidable Significant Effects, Significant Environmental Effects, Less-than-Significant Environmental Effects, and No Effects) are described in more detail below.

UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL EFFECTS

Impact may result in a substantial or potentially substantial, adverse change in the environment, which cannot be reduced to a less than significant level even with implementation of feasible mitigation measures. This level of effect corresponds to a "Potentially Significant Impact" checkmark on the CEQA Checklist in Appendix A.

SIGNIFICANT ENVIRONMENTAL EFFECTS

Impact may result in a substantial or potentially substantial, adverse change in the environment; the incorporation of mitigation measures would reduce the potentially significant impact to a less than significant level. This level of effect corresponds to a "Less Than Significant Impact with Mitigation" checkmark on the CEQA Checklist in Appendix A.

LESS THAN SIGNIFICANT EFFECTS

Impact would not result in a substantial adverse change in the environment and would not require mitigation. This level of effect corresponds to a "Less Than Significant Impact" checkmark on the CEQA Checklist in Appendix A.

NO EFFECTS

Impact would not occur as a result of the proposed project. This level of effect corresponds to a “No Impact” checkmark on the CEQA Checklist in Appendix A.

3.1.2 Effects of the Proposed Project

The No Build Alternative would have “no effects” and therefore is not discussed further.

The CEQA Environmental Checklist (Appendix A) identifies physical, biological, social, and economic factors that might be affected by the Build Alternatives of the proposed project. This checklist is not a NEPA requirement. The findings for the CEQA checklist were determined in consultation with the technical studies prepared for this proposed project and listed in Appendix C.

Caltrans has determined that the Soscol Junction Project would contribute the following effects:

NO EFFECTS

As part of the scoping and environmental analysis conducted for the Build Alternatives, the following environmental issues were considered but no adverse impacts were identified: Agricultural and forest resources, farmlands, coastal zone and wild & scenic rivers, water quality, historical architecture (Soscol House), land use & planning, mineral resources, parks & recreation, population and housing, relocations & real property acquisitions, public service, transportation & traffic, bicycles & pedestrians and utilities & service systems. Please refer to Chapter 2 for a more detailed description of these resources.

LESS-THAN-SIGNIFICANT EFFECTS OF THE PROPOSED PROJECT

The CEQA checklist, Appendix A identifies the following items as “Less than Significant”. These items include resources areas where the Build Alternatives would have a less-than-significant effect prior to the consideration of any avoidance or

minimization measures. In many cases, although the impacts are anticipated to be less-than-significant, the project will include measures beneficial to the environment.

Aesthetics/Visual

Less-than-significant impacts to the visual quality of the project site would occur as a result of tree removal, construction of an overhead structure (flyover), and alterations to topography and sources of light or glare. Avoidance and minimization measures, including replacement planting of trees and aesthetic treatments of the flyover structure and retaining walls, would lessen the negative visual change to the corridor and have been incorporated to reduce the impacts as discussed in Chapter 2, Section 2.1.8.

Air Quality

The Build Alternatives would not cause a significant change to air quality in the project area, conflict with the implementation of an applicable air quality plan, violate any air quality standards, or contribute to any air quality violation. In addition, the Build Alternative would not result in a net increase of any criteria pollutants expose sensitive receptors to substantial pollutant concentrations, or create objectionable odors. However, the project would contribute a less-than-significant impact temporarily to air quality due to construction activities. These would be minimized by compliance with Caltrans' Standard Specifications in Section 14. In addition, to the extent feasible, the project would include practices from the Bay Area Air Quality Management District CEQA Air Quality Guidelines 2012 and follow BMPs. See Chapter 2, Section 2.2.6 and 2.4 for further details.

Biological Resources

The Build Alternatives would not conflict with any local policies or ordinances, or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan. Therefore less-than-significant impacts to the aforementioned plans and policies would occur. Please see Chapter 2, Section 2.3 for further details.

The majority of species analyzed in Chapter 2 do not have the potential to be affected but less-than-significant impacts could occur due to the proposed project; however potential impacts to Swainson's hawk (impact B-3), Migratory Birds (impact B-4) and California coastal steelhead (impact B-5) were identified. Although, these potential impacts are anticipated to be less-than-significant, Caltrans has identified avoidance and minimization measures in Section 2.3 and Appendix D of this document that would further reduce the potential for impacts.

In addition, the Build Alternatives would result in some adverse effects to special-status animal species (impacts B-6 and B-7), sensitive natural communities (impact B-1), and protected wetlands and waters of the U.S (impact WW-1). However, mitigation measures have been incorporated to reduce the impacts to less-than-significant, as discussed further below in the Significant Environmental Effects of the Proposed Project section.

Geology and Soils

The Build Alternatives would not result in significant impacts to the geology of the project area. All structures constructed as part of the project would comply with the Caltrans' seismic design standards. People and structures would not be exposed to substantial adverse effects involving fault rupture or other seismic-related issues. The proposed project would not result in substantial soil erosion or the loss of topsoil and is not located on unstable soil, an unstable geologic unit, or expansive soil. Thus, impacts to geology and soils from the proposed project would be less-than-significant. See Chapter 2, section 2.2.3 for more details.

Hazards and Hazardous Materials

The Build Alternatives would not create any significant hazards to the public or environment. Measures would be taken to avoid exposure to hazardous materials and aerially deposited lead known to exist within the proposed construction areas. Measures would be take to avoid exposure to hazardous materials and aerially

deposited lead known to exist within the proposed construction areas. The proposed project would not impair implementation or interfere with any emergency plans, expose people or structures to a significant risk of loss injury or death involving wild land fires. The project is not within an airport land use map or in the vicinity of a private air strip. Therefore, any impacts from hazards or hazardous materials resulting from the proposed project would be less-than-significant. See Chapter 2, section 2.2.5 for more details.

Hydrology and Water Quality

The Build Alternatives project areas are not located within a FEMA base floodplain and would not 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. There would also be no risk of inundation by seiche, tsunami or mudflow and would have little to no impact on water quality standards, waste discharge requirements, nor would substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table. In addition, there would no alteration of the existing drainage pattern of the site or area, and no alteration of streams or rivers in a way that would cause substantial on or off-site erosion or flooding. Impacts are not anticipated to storm water quality, pollutant loading, and drainage due to the increased impervious surface area. Treatment BMPs would be implemented during construction to address temporary impacts and permanent measures, including biostrips and bioswales would reduce the discharge of pollutant from the pavement and hydromodification downstream of the project. See Chapter 2, section 2.2.2 for further details.

Noise

Significant noise increase is defined as an increase of 12-dBA or more from existing conditions to design-year conditions. Based on the results from the noise modeling assessment, the Build Alternatives would result in an increase of no more than 2.4 dBA. The increase in noise levels generated by the Build Alternatives would therefore not

constitute a significant impact. The Build Alternatives would comply with Caltrans' standards for construction noise minimization measures that prevent significant increases in temporary noise levels. In addition, the project is not within an airport land use plan or within the vicinity of a private airstrip. Thus, noise impacts would be less-than-significant. See Chapter 2, section 2.2.7 for more details.

Cumulative

An evaluation of cumulative effects was conducted and documented in Section 2.4 of this document. All resources impacted by the project were considered for cumulative impacts as part of this evaluation. As in Section 2.4, the following resources would not have a considerable contribution to cumulative impacts: Bicycle and Pedestrian, Swainson's hawk, Geological Resources, Paleontology, Hazardous Waste, Noise, Utilities, Central California Steelhead and Contra Costa goldfields, Traffic, Visual, Water Quality, and Air Quality.

SIGNIFICANT ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

Individually, there were significant environmental impacts to Cultural Resources (Archaeological/Paleontological) and Biological Resources, and cumulative effects to CRLF, wetlands and other waters, and archaeology, which were reduced to less than significant with mitigation. Discussed below are the impacts and the mitigation used to reduce the significance of the impacts.

Cultural Resources (Archaeological/Paleontological):

C-1 Archaeology

Alternative 5, Option 1 & Alternative 5, Option 2:

Environmental Consequence: Both Build Alternatives have a possibility of encountering significant archaeological material from site CA-NAP 15/H during construction. As a result, an adverse effect to archaeological site CA-NAP-15/H due to proximity to construction is identified. However, with the following mitigation measure the impact

would be reduced to less-than-significant. Provisions to address these circumstances are included in Chapter 2, Section 2.1.9.

Mitigation Measures: MOA has been executed. Implement MOA to recover significant data that could be unearthed during construction. If cultural materials are discovered during construction, all earth-moving activity within and around the immediate discovery area would be diverted until a qualified archaeologist can assess the nature and significance of the find. If human remains are discovered, State Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98 would be followed.

C-2 Paleontology

Alternative 5, Option 1 & Alternative 5, Option 2:

Environmental Consequences:

Due to the high sensitivity of geologic formations in the project area, there is a potential to disturb and potentially destroy paleontological resources if not handled properly. Destruction of paleontological resources would be considered a significant impact due to the lost opportunity to preserve and study these resources. A Paleontological Mitigation Plan would be prepared to ensure that paleontological resources are properly identified and protected during construction activities. With the incorporation of the Paleontological Mitigation Plan impacts to paleontological resources are anticipated to be minimized to a less-than-significant level. Please see Chapter 2, Section 2.2.4 for further details.

Mitigation Measure: A Paleontological Mitigation Plan would be prepared to define the specific mitigation measures and methods that would be implemented during construction.

Biological Resources:

The Build Alternatives would result in significant impacts to special-status animal species (impact B-6 and B-7), sensitive natural communities (impact B-1), and protected wetlands and waters of the U.S. (impact WW-1). However with the incorporation of avoidance, minimization, and/or mitigation measures, the impacts of the following resources would be reduced to less-than-significant.

B-1 Trees

Alternative 5, Option 1 & Alternative 5, Option 2:

Environmental Consequence: Of the 76 trees, 23 occur within riparian habitat. Trees provide habitat, including nesting habitat to species covered under the Migratory Bird Treaty Act. Impacts within the riparian area would be subject to a California Department of Fish and Wildlife Lake and Streambed Alteration Agreement (California Fish and Game Code 1602). The impacts to riparian/sensitive habitat would be reduced to a less-than-significant level by the measures identified below and detailed further in Section 2.3.1.

Mitigation Measures: Construction activities would be limited to the smallest area possible. A clear delineation of the construction would be incorporated into the project plans and specifications. Fencing would be installed to protect environmentally sensitive areas (ESAs) and confine workers and equipment to designated construction zones.

Caltrans would mitigate 23 riparian trees at a 3:1 ratio on- or off-site and 53 non-riparian trees at a 1:1 ratio on- or off-site. Caltrans would plant a total of 122 replacement trees. These trees would be planted in areas away from highway impacts.

If there is an instance where a tree removal is considered both a biological and visual resource impact, then the greater of the replacement ratio would be implemented.

B-2, WW-1 Wetlands and Other Waters

Temporary and permanent impacts to wetlands would be avoided to the fullest extent possible, but some impacts would be unavoidable to successfully construct the proposed project and maintain safety standards in the highway design. By adhering to the “no net loss” policy set forth by USACOE, the impacts to wetlands and other waters would be reduced to less-than-significant for both build alternatives.

Alternative 5, Option 1:

Environmental Consequences**:** The area of permanently impacted “other waters” within the project BSA is 0.01 ac. The area of permanently impacted “wetlands” within the BSA 0.03 ac.

Mitigation Measures: Mitigation for the permanent loss of “other waters” and wetlands is proposed at a ratio of 1:1. Caltrans would obtain the appropriate USACE 404 Nationwide Permit and a 1602 Streambed Alteration Agreement from the CDFW prior to end of the Plans, Specifications, and Estimates (PS&E) phase of the project. Temporary impacts areas would be reseeded and graded on-site to pre-project conditions at a 1:1 ratio.

Caltrans would also obtain a National Clean Water Act 401 certification from the state Regional Water Quality Control Board –San Francisco Bay (SFBRWQCB). Caltrans would establish final mitigation requirements during the permitting process with SFBRWQCB.

Alternative 5, Option 2:

Environmental Consequences: The area of permanently impacted “other waters” within the project BSA is 0.02 ac. The area of permanently impacted “wetlands” within the BSA is 0.03.

Mitigation Measures: Avoidance, minimization and compensation measures for wetlands and other waters of the U.S. would be the same under Alternative 5, Option 2 as for Alternative 5, Option 1.

B-6 California red-legged frog

Alternative 5, Option 1:

Environmental Consequences: May disrupt dispersal, entrap, harass, and cause mortality to CRLF due to impacts to CRLF potential habitat. May permanently impact 9.21 ac and temporarily 11.99 ac of CRLF potential habitat. Incorporating the following measures would reduce the impacts to CRLF to a less-than-significant level.

Mitigation Measures: For seasonal avoidance of the CRLF, construction would not occur from November 1 through May 31 near drainages rated as high quality CRLF aquatic habitat to the maximum extent practicable. Suitable habitat would be avoided with the use of ESA fencing. Caltrans proposes to mitigate temporary impacts at a 1:1 ratio. Mitigation would be onsite through site restoration. The remainder would be mitigated through the purchase of credits at a mitigation bank. For permanent impacts, Caltrans proposes to mitigate all impacts off-site at a 3:1 ratio through purchasing credits at a mitigation bank.

Caltrans would seek a BO for the project from the USFWS and would implement appropriate avoidance and minimization measures.

Caltrans would consult with CDFW and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area.

Alternative 5, Option 2:

Environmental Consequences: May disrupt dispersal, entrap, harass, and cause mortality to CRLF due to impacts to CRLF potential habitat. May permanently impact

9.15 ac and temporarily impact 12.82 ac of CRLF potential habitat. Incorporating the following measures would reduce the impacts to CRLF to a less-than-significant level.

Mitigation Measures: For seasonal avoidance of the CRLF, construction would not occur from November 1 through May 31 near drainages rated as high quality CRLF aquatic habitat to the maximum extent practicable. Suitable habitat would be avoided with the use of ESA fencing. Caltrans proposes to mitigate temporary impacts at a 1:1 ratio. Mitigation would be onsite through site restoration. The remainder would be mitigated through the purchase of credits at a mitigation bank. For permanent impacts, Caltrans proposes to mitigate all impacts off-site at a 3:1 ratio through purchasing credits at a mitigation bank.

Caltrans would seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS) and would implement appropriate avoidance and minimization measures.

Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area.

B-7 Contra Costa goldfield and Critical Habitat

Alternative 5, Option 1:

Environmental Consequences: The project would affect Contra Costa Goldfield Critical Habitat. 4.63 ac would be permanently affected and 2.78 ac would be temporarily affected. However by implementing the following measures, the impact to CCGF and the Critical Habitat would be reduced to less-than-significant.

Mitigation Measures: During Project Development, Caltrans redesigned a portion of the project to avoid impacts to the CCGF.

Environmentally Sensitive Area (ESA) fencing would be used to protect CCGF and CCGF Critical Habitat. This area would be clearly marked to avoid inadvertent encroachment of personnel or equipment.

Caltrans would seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS).

Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CCGF habitat locations within the project area.

Alternative 5, Option 2:

Environmental Consequences: The project would affect Contra Costa Goldfield Critical Habitat. 3.23 ac would be permanently affected and 2.85 ac would be temporarily affected. However by implementing the following measures, the impact to CCGF and the Critical Habitat would be reduced to less-than-significant.

Mitigation Measures: During Project Development, Caltrans redesigned a portion of the project to avoid impacts to the CCGF.

Environmentally Sensitive Area (ESA) fencing would be used to protect CCGF and CCGF Critical Habitat. This area would be clearly marked to avoid inadvertent encroachment of personnel or equipment.

Caltrans would seek a BO for the project from USFWS.

Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CCGF habitat locations within the project area.

Cumulative

An evaluation of cumulative effects was conducted and documented in Section 2.4 of this document. All resources impacted by the project were considered for cumulative impacts as part of this evaluation. As in Section 2.4, the following resources would have a considerable contribution to cumulative impacts: Archaeological resources, California red legged frog upland habitat, and Wetlands and Other Waters. However, with the *appropriate* mitigation measures for individual resources, impacts would be reduced to less-than-significant. Archaeological cumulative effects will be reduced to less-than significant with measure C-1. California red legged frog impacts would be reduced to less-than-significant with measure B-6. Impacts to Wetlands and Other Waters would be reduced to less-than-significant with measures B-2 and WW-1. Please see the impacts and mitigation measures discussed in this chapter above or Chapter 2 for specific details.

3.1.3 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system. An ever-increasing body of scientific research attributes these climatological changes to greenhouse gas (GHG) emissions, particularly those generated from the production and use of fossil fuels.

While climate change has been a concern for several decades, the establishment of the Intergovernmental Panel on Climate Change (IPCC) by the United Nations and World Meteorological Organization in 1988 has led to increased efforts devoted to GHG emissions reduction and climate change research and policy. These efforts are primarily concerned with the emissions of GHGs generated by human activity including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF_6), HFC-23 (fluoroform), HFC-134a (s, s, s, 2-tetrafluoroethane), and HFC-152a (difluoroethane).

In the U.S., the main source of GHG emissions is electricity generation, followed by transportation. In California, however, transportation sources (including passenger cars, light-duty trucks, other trucks, buses, and motorcycles make up the largest source of GHG-emitting sources. The dominant GHG emitted is CO_2, mostly from fossil fuel combustion.

There are typically two terms used when discussing the impacts of climate change: “Greenhouse Gas Mitigation” and “Adaptation.” "Greenhouse Gas Mitigation" is a term for reducing GHG emissions to reduce or "mitigate" the impacts of climate change. “Adaptation" refers to the effort of planning for and adapting to impacts resulting from climate change (such as adjusting transportation design standards to withstand more intense storms and higher sea levels).[9]

[9] http://climatechange.transportation.org/ghg_mitigation/

There are four primary strategies for reducing GHG emissions from transportation sources: 1) improving the transportation system and operational efficiencies, 2) reducing travel activity, 3) transitioning to lower GHG-emitting fuels, and 4) improving vehicle technologies/efficiency. To be most effective, all four strategies should be pursued cooperatively. [10] The following Regulatory Setting section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

Regulatory Setting

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and pro-active approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley. Vehicular Emissions: Greenhouse Gases, 2002: requires the California Air Resources Board (ARB) to develop and implement regulations to reduce automobile and light truck GHG emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year. In June 2009, the United States Environmental Protection Agency (U.S. EPA) Administrator granted a Clean Air Act waiver of preemption to California. This waiver allowed California to implement its own GHG emission standards for motor vehicles beginning with model year 2009. California agencies will be working with federal agencies to conduct joint rulemaking to reduce GHG emissions for passenger cars model years 2017-2025.

Executive Order S-3-05 (EO): (signed on June 1, 2005, by former Governor Arnold Schwarzenegger) the goal of this EO is to reduce California's GHG emissions to: 1) year 2000 levels by 2010, 2) year 1990 levels by the 2020, and 3) 80 percent below the

[10] http://www.fhwa.dot.gov/environment/climate_change/mitigation/

year 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

AB 32, the Global Warming Solutions Act of 2006 Núñez and Pavley: AB 32 sets the same overall GHG emissions reduction goals as outlined in EO S-3-05, while further mandating that ARB create a scoping plan, (which includes market mechanisms) and implement rules to achieve “real, quantifiable, cost-effective reductions of greenhouse gases.”

Executive Order S-20-06 (signed on October 18, 2006 by former Governor Arnold Schwarzenegger) further directs state agencies to begin implementing AB 32, including the recommendations made by California’s Climate Action Team.

Executive Order S-01-07: (signed on January 18, 2007 by former Arnold Governor 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 ten percent by the year 2020.

Executive Order S-13-08: (signed on November 14, 2008 by former Arnold Governor Schwarzenegger) the goal of this EO is to have the state agencies plan for sea level rise and climate impacts through coordination of the state Climate Adaptation Strategy.

Executive Order B-18-12: (signed on April 25, 2012 by Edmund G. Brown, Jr.) set forth that the State agencies, departments, and other entities reduce entity-wide greenhouse gas emissions at least ten percent by 2015 and twenty percent by 2020, as measured against a 2010 baseline .

Senate Bill 97 (SB 97) Chapter 185, 2007: required the Governor's Office of Planning and Research (OPR) to develop recommended amendments to the California Environmental Quality Act (CEQA) Guidelines for addressing GHG emissions. The amendments became effective on March 18, 2010.

Caltrans Director's Policy 30 (DP-30) Climate Change (approved June 22, 2012): is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities. This policy contributes to the Department's stewardship goal to preserve and enhance California's resources and assets.

Federal

Although climate change and GHG reduction is a concern at the federal level; currently there are , no regulations or legislation that have been enacted specifically addressing GHG emissions reductions and climate change at the project level. Neither the United States Environmental Protection Agency (U.S. EPA) nor the Federal Highway Administration (FHWA) has promulgated explicit guidance or methodology to conduct project-level GHG analysis. As stated on FHWA's climate change website (http://www.fhwa.dot.gov/hep/climate/index.htm), climate change considerations should be integrated throughout the transportation decision-making process–from planning through project development and delivery. Addressing climate change mitigation and adaptation up front in the planning process will facilitate decision-making and improve efficiency at the program level, and will inform the analysis and stewardship needs of project level decision-making. Climate change considerations can easily be integrated into many planning factors, such as supporting economic vitality and global efficiency, increasing safety and mobility, enhancing the environment, promoting energy conservation, and improving the quality of life.

The four strategies set forth by FHWA to lessen climate change impacts do correlate with efforts that the state has undertaken and is undertaking to deal with transportation and climate change; the strategies include improved transportation system efficiency, cleaner fuels, cleaner vehicles, and a reduction in the growth of vehicle hours travelled.

Climate change and its associated effects are being addressed through various efforts at the federal level to improve fuel economy and energy efficiency, such as the

"National Clean Car Program" and EO 13514 - *Federal Leadership in Environmental, Energy and Economic Performance*.

Executive Order 13514 is focused on reducing greenhouse gases internally in federal agency missions, programs and operations, but also direct federal agencies to participate in the Interagency Climate Change Adaptation Task Force, which is engaged in developing a national strategy for adaptation to climate change.

On April 2, 2007, in *Massachusetts v. EPA*, 549 U.S. 497 (2007), the Supreme Court found that greenhouse gases are air pollutants covered by the Clean Air Act and that the U.S. EPA has the authority to regulate GHG. The Court held that the U.S. EPA Administrator must determine whether or not emissions of greenhouse gases from new motor vehicles cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

On December 7, 2009, the U.S. EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- **Endangerment Finding:** The Administrator found that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6)—in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator found that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Although these findings did not themselves impose any requirements on industry or other entities, this action was a prerequisite to finalizing the U.S. EPA's *Proposed*

Greenhouse Gas Emission Standards for Light-Duty Vehicles, which was published on September 15, 2009[11]. On May 7, 2010 the final *Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards* was published in the Federal Register.

U.S. EPA and the National Highway Traffic Safety Administration (NHTSA) are taking coordinated steps to enable the production of a new generation of clean vehicles with reduced GHG emissions and improved fuel efficiency from on-road vehicles and engines. These next steps include developing the first-ever GHG regulations for heavy-duty engines and vehicles, as well as additional light-duty vehicle GHG regulations. These steps were outlined by President Obama in a Presidential Memorandum on May 21, 2010.[12]

The final combined USEPA and NHTSA standards that make up the first phase of this national program apply to passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide per mile (the equivalent to 35.5 miles per gallon [MPG)] if the automobile industry were to meet this CO_2 level solely through fuel economy improvements). Together, these standards will cut GHG emissions by an estimated 960 million metric tons and 1.8 billion barrels of oil over the lifetime of the vehicles sold under the program (model years 2012-2016).

On November 16, 2011, U.S. EPA and NHTSA issued their joint proposal to extend this national program of coordinated greenhouse gas and fuel economy standards to model years 2017 through 2025 passenger vehicles.

[11] http://www.epa.gov/oms/climate/regulations.htm#1-1
[12] http://epa.gov/otaq/climate/regulations.htm

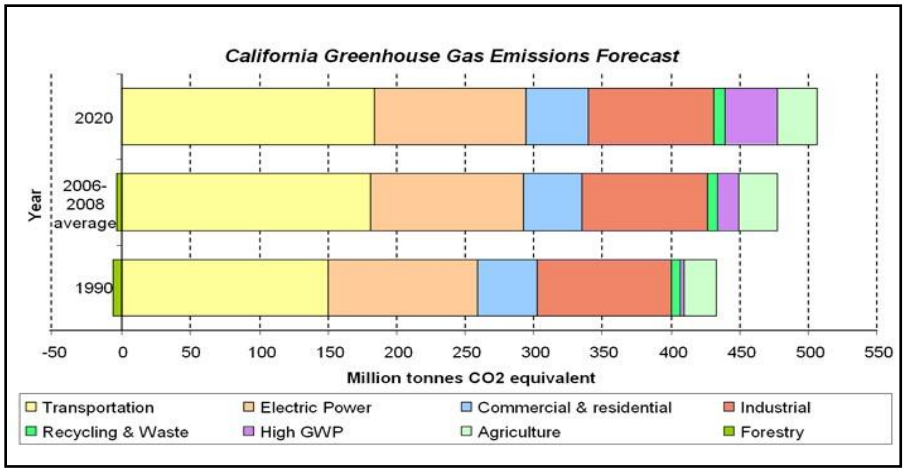
Project Analysis

An individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may contribute to a potential impact through its *incremental* change in emissions when combined with the contributions of all other sources of GHG.[13] In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable" (CEQA Guidelines sections 15064(h)(1) and 15130). To make this determination the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult, if not impossible, task.

The AB 32 Scoping Plan mandated by AB 32 contains the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, ARB released the GHG inventory for California (forecast last updated: October 28, 2010). The forecast is an estimate of the emissions expected to occur in the year 2020 if none of the foreseeable measures included in the Scoping Plan were implemented. The base year used for forecasting emissions is the average of statewide emissions in the GHG inventory for 2006, 2007, and 2008.

[13] This approach is supported by the AEP: *Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents* (March 5, 2007), as well as the South Coast Air Quality Management District (Chapter 6: The CEQA Guide, April 2011) and the US Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

Figure 3-1 California Greenhouse Gas Forecast



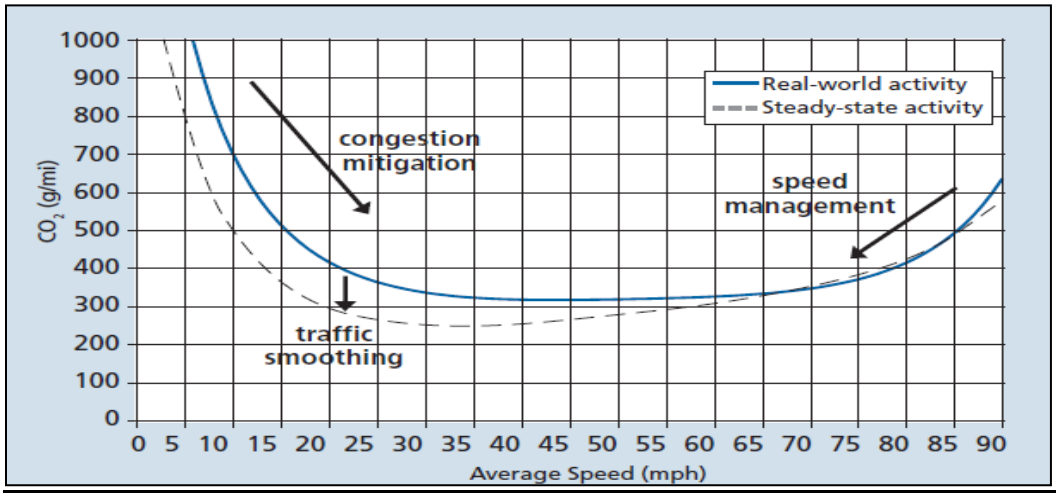
Source: http://www.arb.ca.gov/cc/inventory/data/forecast.htm

The Department and its parent agency, the Transportation Agency, have taken an active role in addressing GHG emission reduction and climate change. Recognizing that 98 percent of California's GHG emissions are from the burning of fossil fuels and 40 percent of all human made GHG emissions are from transportation, the Department has created and is implementing the Climate Action Program at Caltrans that was published in December 2006.14

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 carbon dioxide (CO_2) from mobile sources such as automobiles, occur at stop-and-go speeds (0-25 miles per hour) and speeds over 55 mph; the most severe emissions occur from 0-25 miles per hour (see Figure 3-2 below). To the extent that a project relieves congestion by enhancing operations and improving travel times in high congestion travel corridors GHG emissions, particularly CO_2, may be reduced.

[14] Caltrans Climate Action Program is located at the following web address: http://www.dot.ca.gov/hq/tpp/offices/ogm/key_reports_files/State_Wide_Strategy/Caltrans_Climate_Action_Program.pdf

Figure 3-2 Possible Effect of traffic operation strategies in reducing on-road CO2 emission[15]



The Metropolitan Transportation Commission's long range Transportation 2035 Plan (Change In Motion Plan) for the San Francisco Bay area, aims to reduce miles traveled and emissions by cars and trucks in the Bay Area, while increasing the efficiency of the roadway and transit systems for all users. In order to reduce VMT and emissions, the plan aims to use investment choices and adopted policies such as pricing of excess carpool-lane capacity on highways, a brand-new Transportation Climate Action Campaign to target greenhouse gases, a major public transit expansion program, a multipronged Freeway Performance Initiative to maximize throughput on existing highways, and an overall emphasis on measurable performance improvements. The Soscol Junction Project is designed to improve the operation and traffic flow at the intersection of SR 29 and SR 221 and does not increase capacity on these routes. Under existing conditions, the signalized intersection of SR 221 and SR 29 is traffic congestion at levels of service D and F during peak periods and is operating at or near capacity (February 2008 data). The traffic projections indicate that congestion at the intersection will worsen from existing conditions and will operate at capacity if the proposed project is not constructed in 2039.

[15] **Traffic Congestion and Greenhouse Gases:** Matthew Barth and Kanok Boriboonsomsin(TR News 268 May-June 2010)<http://onlinepubs.trb.org/onlinepubs/trnews/trnews268.pdf>

The operation of the proposed junction project will improve the traffic operations with and without the Napa Pipe Project. However, it will not have a significant effect on vehicle miles traveled (VMT) in a regional context.

Table 3-1 below illustrates the VMT and associated CO_2 emissions estimated by Caltrans in the following conditions: 2008 baseline; 2019 project opening year, 2039 no-build with and without the Napa Pipe Project; and 2039 build with and without the Napa Pipe Project. The results indicate that the CO_2 daily emissions are expected to decrease 4.8 by the year 2039 if the proposed project is not constructed. In comparison to the baseline, if the proposed project is constructed, the daily CO_2 emissions is expected in 2039 to decrease by 4.6 for Alternative 5, Option 1 without Napa Pipe Project; 5.1 decrease for Alternative 5, Option 2 without Napa Pipe Project; 3.1 decrease of daily CO_2 emissions for Alternative 5, Option 1 with Napa Pipe Project; and a 3.7 decrease for Alternative 5, Option 2 with Napa Pipe Project.

Table 3-1Daily VMT and Daily and Annual CO2e Emissions (without Napa Pipe)

	Daily VMT (Vehicle-Miles-Traveled) in Napa County Units = million vehicle-miles traveled			Daily CO_2 (MT* CO_2e** per day)			Annual CO_2 (MT CO_2e per year)		
	2008 Base Year	2019 Project Opening Year	2039 Design Year	2008 Base Year	2019 Project Opening Year	2039 Design Year	2008 Base Year	2019 Project Opening Year	2039 Design Year
Existing network	3.81	N/A*	N/A	60.4	N/A	N/A	22,037.2	N/A	N/A
No Build	N/A	4.86	6.47	N/A	53.0	64.8	N/A	19,335.3	23,640.6
Project Alternative 5 Option 1	N/A	4.86	6.47	N/A	50.2	55.8	N/A	18,336.8	20,360.1
Project Alternative 5 Option 2	N/A	4.86	6.47	N/A	49.8	55.3	N/A	18,186.5	20,174.9
*N/A: Not Applicable									
Source: The model runs were done by Caltrans using CT-EMFAC, a Department version of EMFAC based on the Air Resources Board's EMFAC2011. Inputs were provided by Caltrans Transportation Studies and Highway Operations offices. *MT is Metric Ton **CO_2e is carbon dioxide equivalent									

When the Napa Pipe Project is taken into consideration, VMT will increase slightly; however predicted VMT will still be same for the no-build and both no-build conditions in both 2019 and 2039. There are a number of reasons why the build and no-build vehicle miles traveled (VMT) are the same:

1. General origin and destination travel patterns tend to be resistant to change. Heavy peak period congestion will induce travelers to change the time of their travel but over a full 24 hour period the trip patterns are very resistant to change.
2. Reductions to travel times along a certain route will cause travelers to change the routes they take. However, the new route taken may be longer or shorter than the old one so there is no necessarily any clear effect on the number of miles traveled.

3. The Solano-Napa County Travel Demand Model used to project traffic for this project may not have projected the effect of the congestion at the SR 29/SR 221 intersection sufficiently. It is much more difficult to model the effects of a congested intersection than the effects of a congested roadway segment. Therefore, like nearly all travel demand models the Napa-Solano Travel Demand Model handles congestion due to sections of highway with insufficient capacity better than congestion at intersections.
4. It is also important to remember that the build and no-build VMT are not exactly the same. The model calculated slightly different VMTs for the two alternatives. However if rounded to any reasonable level of precision they are the same. The really important point is that while we can't be certain what affect this project will have on VMT, we can be certain that it will be small. Even after the project is completed it will be impossible to say what effect the project had on VMT. Any small changes due to the project will likely be impossible to discern amid larger ongoing changes in overall travel.

The conclusions of this discussion are not affected when the Napa Pipe Project is taken into consideration.

Table 3-2 Daily VMT and Daily and Annual CO_2 emissions (with Napa Pipe)

	Daily VMT (Vehicle-Miles-Traveled) in Napa County Units = million vehicle-miles traveled			Daily CO_2 (w/ Napa Pipe) (MT CO_2e per day)			Annual CO_2 (w/ Napa Pipe) (MT CO_2e per year)		
	2008 Base Year	2019 Project Opening Year	2039 Design Year	2008 Base Year	2019 Project Opening Year	2039 Design Year	2008 Base Year	2019 Project Opening Year	2039 Design Year
Existing network	3.81	N/A*	N/A	60.4	N/A	N/A	22,037.2	N/A	N/A
No Build	N/A	4.86	6.47	N/A	53.4	66.9	N/A	19,474.9	24,423.9
Project Alternative 5 Option 1	N/A	4.86	6.47	N/A	50.0	57.3	N/A	18,239.4	20,909.5
Project Alternative 5 Option 2	N/A	4.86	6.47	N/A	50.4	56.7	N/A	18,383.6	20,696.6

pplicable

Source: The model runs were done by Caltrans using CT-EMFAC, a Department version of EMFAC based on the Air Resources Board's EMFAC2011. Inputs were provided by Caltrans Transportation Studies and Highway Operations offices.

The project-level version of California Air Resources Board's EMission FACtors (EMFAC) model, EMFAC 2011-PL (version 1.1), was used to evaluate the emissions associated with on-road vehicles for the Soscol Junction Project. The results are not necessarily an accurate reflection of what the true CO_2 emissions will be because the vehicle emissions are dependent on other factors that are not part of the model such as the fuel blends, rate of acceleration, and the aerodynamics and efficiency of the vehicles. However, the above CO_2 emissions results show the reduction of the emissions compensate for the increase in vehicle miles traveled (VMT) and improve traffic flow resulting in a decrease in CO_2 emissions in 2039.

There is no substantial change in VMT between alternatives, the only factor affecting the differences in CO_2 in Tables 3-1 and 3-2 are the emission factors between

forecasted years. The EMFAC emission factors vary by year for a given location based on a variety of factors such as fleet turn over and changes in regulations.

Construction Emissions

Greenhouse gas emissions for transportation projects can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

Limitations and Uncertainties with Modeling

EMFAC

Although EMFAC can calculate CO_2 emissions from mobile sources, the model does have limitations when it comes to accurately reflecting changes in CO_2 emissions due to impacts on traffic. According to the National Cooperative Highway Research Program report, Development of a Comprehensive Modal Emission Model (April 2008) and a 2009 University of California study[16], brief but rapid accelerations, such as those occurring during congestion, can contribute significantly to a vehicle's CO_2 emissions during a typical urban trip. Current emission-factor models are insensitive to the distribution of such modal events (i.e., cruise, acceleration, deceleration, and idling) in the operation of a vehicle and instead estimate emissions by average trip speed. This

[16] Matthew Bartha, Kanok Boriboonsomsin. 2009. *Energy and emissions impacts of a freeway-based dynamic eco-driving system.* Transportation Research Part D: Transport and Environment Volume 14, Issue 6, August 2009, Pages 400–410

limitation creates an uncertainty in the model's results when compared to the estimated emissions of the various alternatives with baseline in an attempt to determine impacts. Although work by EPA and the CARB is underway on modal-emission models, neither agency has yet approved a modal emissions model that can be used to conduct this more accurate modeling.

CARB is currently not using EMFAC to create its inventory of greenhouse gas emissions. It is unclear why the CARB has made this decision. Their website 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 [greenhouse gas] inventory which is based on fuel usage information. However, ARB is working towards reconciling the emission estimates from the fuel usage approach and the models.[17]

Other Variables

With the current science, project-level analysis of greenhouse gas emissions has limitations. Although a greenhouse gas analysis is included for this project, there are numerous key greenhouse gas 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.

First, vehicle fuel economy is increasing. The EPA's annual report, "Light-Duty Automotive Technology and Fuel Economy Trends: 1975 through 2012 ,"[18] which provides data on the fuel economy and technology characteristics of new light-duty vehicles including cars, minivans, sport utility vehicles, and pickup trucks, confirms that average fuel economy has improved each year beginning in 2005, and is now at a record high. Corporate Average Fuel Economy (CAFE) standards remained the same between model years 1995 and 2003 and subsequently began setting increasingly higher fuel economy standards for future vehicle model years. The EPA estimates that

[17] http://www.arb.ca.gov/msei/offroad.htm
[18] http://www.epa.gov/oms/fetrends.htm

light duty fuel economy rose by 16% from 2007 to 2012. Table 3-3 shows the increases in required fuel economy standards for cars and trucks between Model Years 2012 and 2025 as available from the National Highway Traffic Safety Administration for the 2012-2016 and 2017-2025 CAFE Standards.

Table 3-3 Average Required Fuel Economy (mpg)

	2012	2013	2014	2015	2016	2018	2020	2025
Passenger Cars	33.3	34.2	34.9	36.2	37.8	41.1-41.6	44.2-44.8	55.3-56.2
Light Trucks	25.4	26	26.6	27.5	28.8	29.6-30.0	30.6-31.2	39.3-40.3
Combined	29.7	30.5	31.3	32.6	34.1	36.1-36.5	38.3-38.9	48.7-49.7
Source: EPA 2013, http://www.epa.gov/fueleconomy/fetrends/1975-2012/420r13001.pdf								

Second, near zero carbon vehicles will come into the market during the design life of this project. According to the 2013 Annual Energy Outlook (AEO2013):

> "LDVs that use diesel, other alternative fuels, hybrid-electric, or all-electric systems play a significant role in meeting more stringent GHG emissions and CAFE standards over the projection period. Sales of such vehicles increase from 20 percent of all new LDV sales in 2011 to 49 percent in 2040 in the AEO2013 Reference case."[19]

The greater percentage of alternative fuel vehicles on the road in the future will reduce overall GHG emissions as compared to scenarios in which vehicle technologies and fuel efficiencies do not change.

Third, California has recently adopted a low-carbon transportation fuel standard in 2009 to reduce the carbon intensity of transportation fuels by 10 percent by 2020. The regulation became effective on January 12, 2010 (codified in title 17, California Code of Regulations, Sections 95480-95490). Beginning January 1, 2011, transportation fuel producers and importers must meet specified average carbon intensity requirements for fuel in each calendar year.

[19] http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf

Lastly, driver behavior has been changing as the U.S. economy and oil prices have changed. In its January 2008 report, "Effects of Gasoline Prices on Driving Behavior and Vehicle Market,"[20] the Congressional Budget Office found the following results based on data collected from California: 1) freeway motorists adjust to higher gas prices by making fewer trips and driving more slowly; 2) the market share of sports utility vehicles is declining; and 3) the average prices for larger, less-fuel-efficient models declined from 2003 to 2008 as average prices for the most-fuel-efficient automobiles have risen, showing an increase in demand for the more fuel efficient vehicles. More recent reports from the Energy Information Agency[21] and Bureau of Economic Analysis[22] also show slowing re-growth of vehicle sales in the years since its dramatic drop in 2009 due to the Great Recession as gasoline prices continue to climb to $4 per gallon and beyond.

Limitations and Uncertainties with Impact Assessment

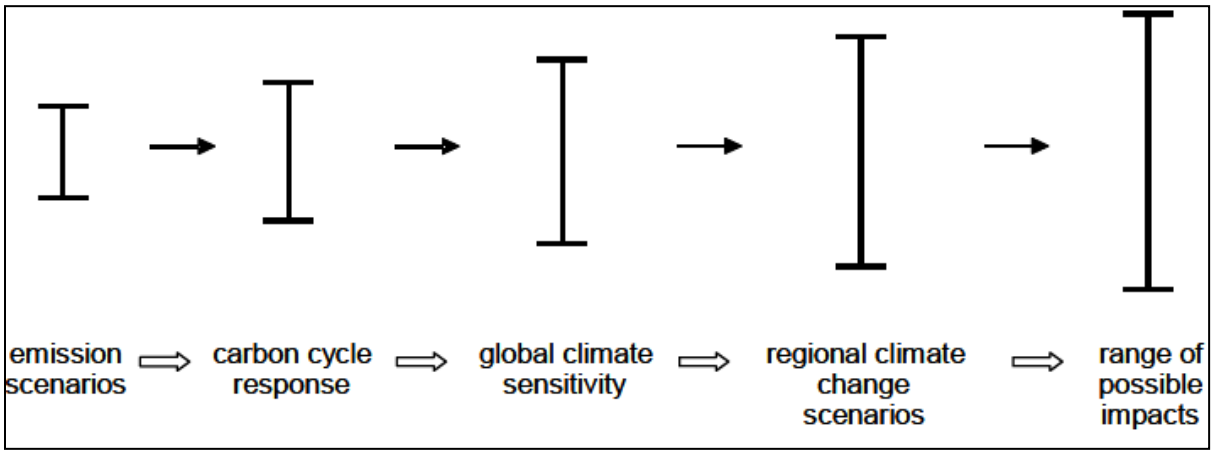
Taken from p. 5-22 of the National Highway Traffic Safety Administration Final EIS for MY2017-2025 CAFE Standards (July 2012), Figure 2.6 illustrates how the range of uncertainties in assessing greenhouse gas impacts grows with each step of the analysis:

> "Moss and Schneider (2000) characterize the "cascade of uncertainty" in climate change simulations Figure 2.6). As indicated in Figure 3-3, the emission estimates used in this EIS have narrower bands of uncertainty than the global climate effects, which are less uncertain than regional climate change effects. The effects on climate are, in turn, less uncertain than the impacts of climate change on affected resources (such as terrestrial and coastal ecosystems, human health, and other resources […] Although the uncertainty bands broaden with each successive step in the analytic chain, all values

[20] http://www.cbo.gov/ftpdocs/88xx/doc8893/01-14-GasolinePrices.pdf
[21] http://www.eia.gov/oiaf/aeo/tablebrowser/aeo_query_server/?event=ehExcel.getFile&study=AEO2013&region=0-0&cases=ref2013-d102312a&table=114-AEO2013&yearFilter=0
[22] Historical Vehicle Sales: www.bea.gov/national/xls/gap_hist.xls

within the bands are not equally likely; the mid-range values have the highest likelihood."[23]

Figure 3-3: Cascade of Uncertainties



Much of the uncertainty in assessing an individual project's impact on climate change surrounds the global nature of the climate change. Even assuming that the target of meeting the 1990 levels of emissions is met, there is no regulatory or other framework in place that would allow for a ready assessment of what any modeled increase in CO_2 emissions would mean for climate change given the overall California greenhouse gas emissions inventory of approximately 430 million tons of CO_2 equivalent. This uncertainty only increases when viewed globally. The IPCC has created multiple scenarios to project potential future global greenhouse gas emissions as well as to evaluate potential changes in global temperature, other climate changes, and their effect on human and natural systems. These scenarios vary in terms of the type of economic development, the amount of overall growth, and the steps taken to reduce greenhouse gas emissions. Non-mitigation IPCC scenarios project an increase in global

[23] http://www.nhtsa.gov/staticfiles/rulemaking/pdf/cafe/FINAL_EIS.pdf. page 5-22

greenhouse gas emissions by 9.7 up to 36.7 billion metric tons CO_2 from 2000 to 2030, which represents an increase of between 25 and 90%.[24]

The assessment is further complicated by the fact that changes in greenhouse gas emissions can be difficult to attribute to a particular project because the projects often cause shifts in the locale for some type of greenhouse gas emissions, rather than causing "new" greenhouse gas emissions. It is difficult to assess the extent to which any project level increase in CO_2 emissions represents a net global increase, reduction, or no change; there are no models approved by regulatory agencies that operate at the global or even statewide scale.

CEQA Conclusion

As discussed above, both the 2039 with project and future no build show increases in CO_2 emissions over the existing levels, the future build CO_2 emissions are higher than the future no build emissions. In addition, as discussed above, there are also limitations with EMFAC and with assessing what a given CO_2 emissions increase means for climate change. Therefore, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas emissions and CEQA significance, it is too speculative to make a determination regarding significance of the project's direct impact and its contribution on the cumulative scale to climate change. However, Caltrans is firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the following section.

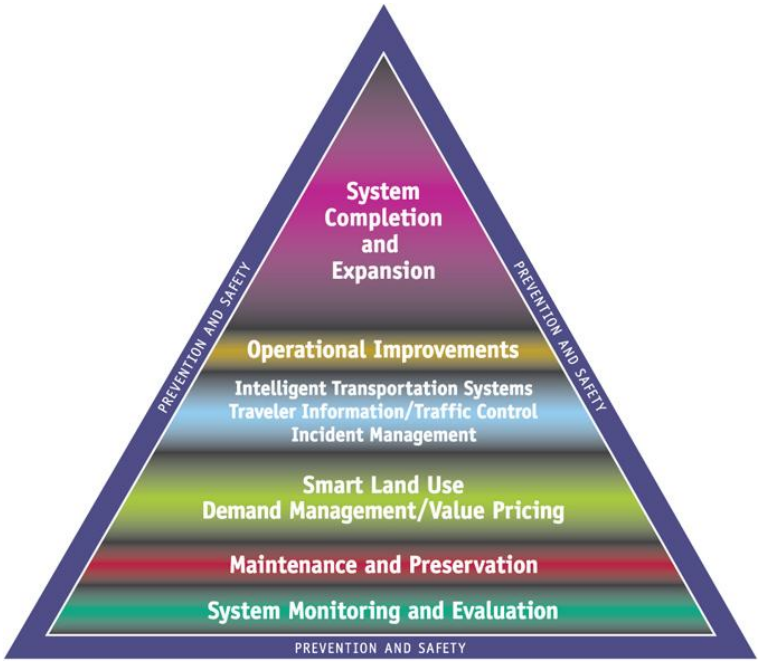
Greenhouse Gas Reduction Strategies

Caltrans continues to be involved on the Governor's Climate Action Team as the ARB works to implement Executive Orders S-3-05 and S-01-07 and help achieve the targets set forth in AB 32. Many of the strategies Caltrans is using to help meet the targets in AB 32 come from then-Governor Arnold Schwarzenegger's Strategic Growth Plan for California. The Strategic Growth Plan targeted a significant decrease in traffic

[24] Intergovernmental Panel on Climate Change (IPCC). February 2007. Climate Change 2007: The Physical Science Basis: Summary for Policy Makers. http://www.ipcc.ch/SPM2feb07.pdf.

congestion below 2008 levels and a corresponding reduction in GHG emissions, while accommodating growth in population and the economy. The Strategic Growth Plan relies on a complete systems approach to attain CO2 reduction goals: system monitoring and evaluation, maintenance and preservation, smart land use and demand management, and operational improvements as shown in Figure 3-4: The Mobility Pyramid.

Figure 3-4: The Mobility Pyramid



Caltrans is supporting efforts to reduce vehicle miles traveled by planning and implementing smart land use strategies: job/housing proximity, developing transit-oriented communities, and high-density housing along transit corridors. Caltrans works closely with local jurisdictions on planning activities, but does not have local land use planning authority. Caltrans assists efforts to improve the energy efficiency of the transportation sector by increasing vehicle fuel economy in new cars, light and heavy-duty trucks; Caltrans is doing this by supporting ongoing research efforts at universities, by supporting legislative efforts to increase fuel economy, and by participating on the

Climate Action Team. It is important to note, however, that control of fuel economy standards is held by the U.S. EPA and ARB.

Caltrans is also working towards enhancing the State's transportation planning process to respond to future challenges. Similar to requirements for regional transportation plans under Senate Bill (SB) 375 (Steinberg 2008), SB 391(Liu 2009) requires the State's long-range transportation plan to meet California's climate change goals under Assembly Bill (AB) 32.

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce greenhouse gas (GHG) emissions. The CTP defines performance-based goals, policies, and strategies to achieve our collective vision for California's future, statewide, integrated, multimodal transportation system.

The purpose of the CTP is to provide a common policy framework that will guide transportation investments and decisions by all levels of government, the private sector, and other transportation stakeholders. Through this policy framework, the CTP 2040 will identify the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the State's transportation needs.

Table 3-4 summarizes the Departmental and statewide efforts that Caltrans is implementing to reduce GHG emissions. More detailed information about each strategy is included in the Climate Action Program at Caltrans (December 2006).

Table 3-4 Climate Change/CO_2 Reduction Strategies

Table 3-4 Climate Change/CO_2 Reduction Strategies						
Strategy	**Program**	**Partnership**		**Method/Process**	Estimated CO_2 Savings Million Metric Tons(MMT)	
		Lead	**Agency**		2010	2020
Smart Land Use	Intergovernmental Review (IGR)	Caltrans	Local governments	Review and seek to mitigate development proposals	Not Estimated	Not Estimated
	Planning Grants	Caltrans	Local and regional agencies & other stakeholders	Competitive selection process	Not Estimated	Not Estimated
	Regional Plans and Blueprint Planning	Regional Agencies	Caltrans	Regional plans and application process	.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	.07	2.17
Mainstream Energy & GHG into Plans and Projects	Office of Policy Analysis & Research; Division of Environmental Analysis	Interdepartmental effort		Policy establishment, guidelines, technical assistance	Not Estimated	Not Estimated
Educational & Information Program	Office of Policy Analysis & Research	Interdepartmental, CalEPA, ARB, CEC		Analytical report, data collection, publication, workshops, outreach	Not Estimated	Not Estimated
Fleet Greening & Fuel Diversification	Division of Equipment	Department of General Services		Fleet Replacement B20 B100	.0045	.0065 .045 .0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	.117	.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries		2.5 % limestone cement mix 25% fly ash cement mix > 50% fly ash/slag mix	1.2 .36	4.2 3.6

Goods Movement	Office of Goods Movement	Cal EPA, ARB, BT&H, MPOs	Goods Movement Action Plan	Not Estimated	Not Estimated
Total				2.72	18.18

Caltrans Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that will ensure coordinated efforts to incorporate climate change into Departmental decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

To the extent that it is applicable or feasible for the project and through coordination with the project development team, the following measures will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

1. Napa County Transportation and Planning Agency will provide public transportation, ridesharing services, park-and-ride and bicycle facilities to help manage the growth for highway capacity.

2. According to Caltrans Standard Specification, the contractor must comply with all rules, ordinances, and regulations regarding air quality.

3. Caltrans and the California Highway Patrol are working together with regional agencies to implement Intelligent Transportation System (ITS) to help manage the efficiency of the existing highway system. ITS commonly consists of electronics, communications, or information processing used singly or in combination to improve the efficiency or safety of a surface transportation system.

Adaptation Strategies

“Adaptation strategies” refer to how Caltrans and others can plan for the effects of climate change on the state’s transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and intensity, and the frequency and intensity of wildfires. These changes may affect the transportation infrastructure in various ways, such as damage to roadbeds from longer periods of intense heat; increasing storm damage from flooding and erosion; and inundation from rising sea levels. These effects will vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. There may also be economic and strategic ramifications as a result of these types of impacts to the transportation infrastructure.

At the federal level, the Climate Change Adaptation Task Force, co-chaired by the White House Council on Environmental Quality (CEQ), the Office of Science and Technology Policy (OSTP), and the National Oceanic and Atmospheric Administration (NOAA), released its interagency task force progress report on October 28, 2011 , outlining the federal government's progress in expanding and strengthening the Nation's capacity to better understand, prepare for, and respond to extreme events and other climate change impacts. The report provides an update on actions in key areas of federal adaptation, including: building resilience in local communities, safeguarding critical natural resources such as freshwater, and providing accessible climate information and tools to help decision-makers manage climate risks .

Climate change adaptation must also involve the natural environment as well. Efforts are underway on a statewide-level to develop strategies to cope with impacts to habitat and biodiversity through planning and conservation. The results of these efforts will help California agencies plan and implement mitigation strategies for programs and projects.

On November 14, 2008, then-Governor Arnold Schwarzenegger signed EO S-13-08, which directed a number of state agencies to address California's vulnerability to sea level rise caused by climate change. This EO set in motion several agencies and actions to address the concern of sea level rise.

In addition to addressing projected sea level rise, the California Natural Resources Agency (Resources Agency) was directed to coordinate with local, regional, state and federal public and private entities to develop The California Climate Adaptation Strategy (Dec 2009) , which summarizes the best-known science on climate change impacts to California, assesses California's vulnerability to the identified impacts, and then outlines solutions that can be implemented within and across state agencies to promote resiliency.

The strategy outline is in direct response to EO S-13-08 that specifically asked the Resources Agency to identify how state agencies can respond to rising temperatures, changing precipitation patterns, sea level rise, and extreme natural events. Numerous other state agencies were involved in the creation of the Adaptation Strategy document, including the California Environmental Protection Agency; Business, Transportation and Housing; Health and Human Services; and the Department of Agriculture. The document is broken down into strategies for different sectors that include: Public Health; Biodiversity and Habitat; Ocean and Coastal Resources; Water Management; Agriculture; Forestry; and Transportation and Energy Infrastructure. As data continues to be developed and collected, the state's adaptation strategy will be updated to reflect current findings.

The National Academy of Science was directed to prepare a Sea Level Rise Assessment Report to recommend how California should plan for future sea level rise. The report was released in June 2012 and included:

- Relative sea level rise projections for California, Oregon and Washington taking into account coastal erosion rates, tidal impacts, El Niño and La Niña events, storm surge and land subsidence rates.

- The range of uncertainty in selected sea level rise projections.
- A synthesis of existing information on projected sea level rise impacts to state infrastructure (such as roads, public facilities and beaches), natural areas, and coastal and marine ecosystems.
- A discussion of future research needs regarding sea level rise.

In 2010, interim guidance was released by The Coastal Ocean Climate Action Team (CO-CAT) as well as Caltrans as a method to initiate action and discussion of potential risks to the states infrastructure due to projected sea level rise. Subsequently, CO-CAT updated the Sea Level Rise guidance to include information presented in the National Academies Study.

All state agencies that are planning to construct projects in areas vulnerable to future sea level rise are directed to consider a range of sea level rise scenarios for the years 2050 and 2100 to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise. Sea level rise estimates should also be used in conjunction with information on local uplift and subsidence, coastal erosion rates, predicted higher high water levels, storm surge and storm wave data.

All projects that have filed a Notice of Preparation as of the date of EO S-13-08, and/or are programmed for construction funding from 2008 through 2013, or are routine maintenance projects may, but are not required to, consider these planning guidelines. NOP was filed with the State Clearinghouse for the Soscol Junction Project in July 2009. The proposed is not expected to experience direct impacts due to projected sea level rise. Executive Order S-13-08 also directed the Business, Transportation, and Housing Agency to prepare a report to assess vulnerability of transportation systems to sea level rise affecting safety, maintenance and operational improvements of the system, and economy of the state. The Department continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, the Department is working to assess which transportation facilities are at greatest risk from climate change effects. However, without statewide planning scenarios for relative sea level rise and other climate change effects, the Department has not been able to determine what change, if any, may be made to its design standards for its transportation facilities. Once statewide planning scenarios become available, the Department will be able review its current design standards to determine what changes, if any, may be needed to protect the transportation system from sea level rise.

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system from increased precipitation and flooding; the increased frequency and intensity of storms and wildfires; rising temperatures; and rising sea levels. The Department is an active participant in the efforts being conducted in response to EO S-13-08 and is mobilizing to be able to respond to the National Academy of Science Sea Level Rise Assessment Report.

Chapter 4 Agency Coordination and Public Involvement

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 the proposed project have been accomplished through a variety of formal and informal methods, including project development team meetings, interagency coordination meetings, and correspondence with other interested parties. This chapter summarizes the results of Caltran's efforts to fully identify, address and resolve project-related issues through early and continuing coordination.

4.1.1 Coordination and Consultation with Public Agencies

During the preparation of this document, the following agencies were consulted:

U.S. Army Corps of Engineers

U.S. Fish and Wildlife Service (See Appendix F)

California Department of Fish and Wildlife (See Appendix G)

California Office of Historic Preservation (See Appendix H)

Napa County Transportation and Planning Authority

Napa County

National Oceanic Atmospheric Administration, National Marine Fisheries

City of Napa

City of American Canyon

A Notice of Preparation (NOP) was filed with the State Clearinghouse in July 2009.

4.1.2 Public Involvement

Correspondence with the interested Native American parties began early in the planning phase for the project. Caltrans consulted with the following American Indian tribes and council:

Mishewal Wappo Tribe of Alexander Valley
Cortina Band of Wintun Indians
Rumsey Indian Rancheria of Wintun
Suscol Intertribal Council
Ya-Ka-Ama

Initial correspondence with the Native American Heritage Commission (NAHC) began on July 26, 2000, and subsequently on June 29, 2004. Letters and maps were sent to Native American individuals on a contact list provided by the NAHC in September 2004.

Charlie Toledo, Director of the Suscol Inter-tribal Council met with Jennifer Darcangelo of Caltrans, and David Glover of the Archaeological Research Center (ARC), California State University in Sacramento at the site of CA-NAP-15/H in order to assist in the documentation of the previous archaeological work near the site. Additional communication with other Native American groups resulted in a meeting at the site on May 20, 2005, with Jennifer Darcangelo of Caltrans and Bill Combs of the Cortina Band of Wintun Indians to visit the site and discuss potential impacts of the flyover project.

An additional letter and map depicting the project area, dated September 9, 2005, was sent to the NAHC requesting a review of their Sacred Lands database and a Native American contact list for the project vicinity. The NAHC responded to a faxed letter dated September 21, 2005, that a records search of the Sacred Lands file

failed to indicate the presents of Native American cultural resources in the immediate project area.

A Notice of Preparation was filed on 07/29/09 to notify state and local agencies of the preparation of the EIR/EA for the proposed project. A public scoping meeting was held on August 10, 2009 at the Napa County City Library (580 Coombs Street, Napa, CA 94558) to make the public aware and inform local residents and interested parties about the proposed project. No public comments were submitted at that time.

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Chapter 6 Distribution List

In compliance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), this document was distributed to interested agencies and elected and appointed officials, as well as to all parties requesting it. The document was made available at the local libraries in the City and County of Napa. A list of agencies and individuals that received the Draft Environmental Impact Report/Environmental Assessment follows.

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Santa Rosa, CA 95404

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Mayor, City of American Canyon
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Federal Agencies:

Environmental Protection Agency,
Region IX
Federal Activites Office, CMD-2
75 Hawthorne Street
San Francisco, CA, 94105-3901

U.S. Fish and Wildlife Service
Sacramento Field Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

National Marine Fisheries Services
Attn: PRD Division
777 Sonoma Avenue, Room 325
Santa Rosa, CA 95404

U. S. Geological Survey
345 Middlefield Road, MS 370
Menlo Park, CA 94027

U.S. Army Corps of Engineers, San Francisco District
ATTN: CESPN-CO-R
333 Market Street, 8th Floor
San Francisco, CA 94105-2197

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PO Box 36003

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Washington, DC 20585

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Caltrans
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Sacramento, CA 94274-0001

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1400 Tenth Street
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Napa, CA 94559

American Canyon Police Department
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Napa Fire Administration
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Napa, CA 94559

American Canyon Fire
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American Canyon, CA 94503

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Brian Farmer, Chairman
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Yocha Dehe Wintun Nation
Marshall McKay, Chairman
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Brooks, CA 95606

Repositories

Napa Main Library
5809 Coombs Street
Napa, CA 94559

NCTPA
625 Burnell Street
Napa, CA 94559

Appendix A CEQA Checklist

CEQA Environmental Checklist

04-NAP-221/29	221-0.0/1.2 & 29-5.0/7.1
Dist.-Co.-Rte.	P.M/P.M.

This checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included either following the applicable section of the checklist or is within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	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 within a state 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 which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

II. AGRICULTURE AND FOREST RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. 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 a Williamson Act contract?	☐	☐	☐	☒
	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒
III. AIR QUALITY: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
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 non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which 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, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☒	☐	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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 §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §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:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	An assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to GHG emissions and CEQA significance, it is too speculative to make a significance determination regarding the project's direct and indirect impact with respect to climate change. Caltrans does remain firmly committed to implementing measures to help reduce the potential effects of the project. These measures are outlined in the body of the environmental document.

VIII. 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 handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
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 wild land fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. 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 such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	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 which would impede or redirect flood flows?	☐	☐	☐	☒
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) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒
X. 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 the 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?	☐	☐	☐	☒
XI. 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?	☐	☐	☐	☒
XII. NOISE: Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
XIII. POPULATION AND HOUSING: Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
XIV. PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
XV. RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒
XVI. TRANSPORTATION/TRAFFIC: Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒
XVII. 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?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

XVIII. 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 which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

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Appendix B Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

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March 2013

NON-DISCRIMINATION
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, religion, sexual orientation, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity it administers.

For information or guidance on how to file a complaint based on the grounds of race, color, national origin, sex, disability, religion, sexual orientation, or age, please visit the following web page: http://www.dot.ca.gov/hq/bep/title_vi/t6_violated.htm.

Additionally, if you need this information in an alternate format, such as in Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone: (916) 324-0449, TTY: 711, or via Fax: (916) 324-1949.

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

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Appendix C List of Technical Studies

Archaeological Survey Report, January 2007

Air Quality Impact Report, May 2014

Addendum to Delineation of Wetlands and Waters, August 2013

Growth Inducement Study, May 2009 (amended September 2011)

Historical Property Survey Report, February 2006

Hazardous Waste Initial Site Investigation Report, December 2003

Natural Environment Study, December 2013

Noise Assessment, February 2006 (revised August 2013)

Paleontological Identification Report, July 2011

Preliminary Geotechnical Report, December 2013

Stormwater Data Report, December 2013

Summary Floodplain Encroachment Report, January 2010

Traffic Operations Analysis Report, October 2011 (addendum February 2012)

Visual Impact Assessment September 2013

Water Quality Report, December 2013

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Appendix D Minimization and/or Mitigation Summary (Draft)

This table will be finalized prior to release of the Final Environmental Document and project approval.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
Community Character, Cohesion and Socioeconomics					
Utilities					
CC-1	Relocation of lines in Caltrans Right-of-Way (ROW)	Same as Alternative 5, Option 1	Design/Construction	Caltrans and/or Contractor	Development of utility relocation plans during the design phase to ensure no interruption of local services.
Visual/Aesthetics					
AV-1	Permanent changes to the existing visual environment at the project site (the intersection of SR 29 and SR 221) would result from the visual presence of the proposed structural flyover and related elements of the project. Related elements include concrete columns and earth embankments to support the elevated lanes of the flyover, concrete retaining walls to contain the earth embankments, and additional pavement surfaces.	Same as Alternative 5, Option 1	Construction	Caltrans and/or Contractor	Cut and fill slopes should be contour graded to match the contours of adjacent, undisturbed topography to the extent feasible. Exposed ground surfaces should be hydro seeded with erosion control grasses and replanted with appropriate native tree and shrub species so as to match adjacent, undisturbed vegetation.
AV-2	Construction of a new flyover with its support columns, retaining walls, and approach embankments.	Same as Alternative 5, Option 1	Construction	Caltrans and/or Contractor	Retaining walls and flyover structures should be given a pattern, texture and/or color to minimize contrast with the existing setting and to reduce the potential for graffiti.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
AV-3	Tree and vegetation removal due to construction of the flyover.	Same as Alternative 5, Option 1	Design/Construction	Caltrans and/or Contractor	The existing trees near SB 121 that require removal for construction of the new connector ramp as part of Alternative 5, Option 2 should be replaced within the limits of the project. Oak and other native trees would be replaced at a ratio of 3:1. Non-native trees should be replaced at a 1:1 ratio. If there is an instance where a tree removal is considered both a biological and visual resource impact, then the greater of the two replacement ratios will be implemented.
AV-4	Construction operations: i.e. earthwork, pile driving (temporary), short term visual impacts due to temporarily exposed earth	Same as Alternative 5, Option 1	Design/Construction	Caltrans and/or Contractor	During the period of construction, material and equipment should be screened to minimize visual exposure from roadways, the vista point, and the Soscol House. Staging areas for equipment and materials should be kept free of debris and clutter. Areas adjacent to work sites should be protected from contractor's operations. Lighting for night work should be placed and adjusted such that light is cast downward and confined to the immediate work area. Lights should be shielded to prevent stray light.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
Cultural Resources (Architectural/Paleontology)					
Archaeology					
C-1	Adverse effect to archaeological site CA-NAP-15/H due to proximity to construction	Same as Alternative 5, Option 1	Construction	Caltrans and/or Contractor	MOA has been executed. Implement Memorandum of Agreement to recover significant data that could be unearthed during construction. 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, State Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98 will be followed.
Paleontology					
C-2	Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impacts previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. Sensitive formations are present in the project area and excavation will extend into these formations	Same as Alternative 5, Option 1	Construction	Caltrans and/or Contractor	A Paleontological Mitigation Plan will be prepared to define the specific mitigation measures and methods that will be implemented during construction.
Noise					
N-1	Construction activities could result in noise levels temporarily greater	Same as Alternative 5, Option 1	Construction	Caltrans and/or Contractor	Caltrans Standard Specifications for construction contracts include

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
	than the existing noise levels				the following noise abatement measures to minimize construction noise impacts: All construction equipment may be required to conform to the provisions in Section 14-8.02 of the latest edition of Standard Specifications to minimize noise from construction activities such as maintaining equipment mufflers in proper operating order.
Air Quality					

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
AQ-1	Temporary impact during construction due to dust emissions and construction vehicle exhaust	Same as Alternative 5, Option 1	Construction	Caltrans and/or Contractor	The construction contractor shall comply with Caltrans' Standard Specifications in Section 14 (2010). Section 14-9.02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Section 14-9.03 is directed at controlling dust. If dust palliative materials other than water are to be used, material specifications are contained in Section 18.In addition, to the extent feasible, the following mitigation practices will be followed 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 mph. 5. All roadways, driveways, and sidewalks to be paved shall be

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					completed as soon as possible. 6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
AQ-1 Ctnd:					8. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations. n addition, the following best management practices (BMPs) may be used: Apply water or dust palliative to the site and equipment as frequently as necessary to control fugitive dust emissions. Fugitive emissions generally must meet a "no visible dust" criterion either at the point of emission or at the right of way line depending on local regulations. Spread soil binder on any unpaved roads used for construction purposes, and all project construction parking areas. Wash off trucks as they leave the right-of-way as necessary to control fugitive dust emissions. Properly tune and maintain construction equipment and vehicles. Use low-sulfur fuel in all construction equipment as provided in California Code of

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					Regulations Title 17, Section 93114. Develop a dust control plan documenting sprinkling, temporary paving, speed limits, and expedited revegetation of disturbed slopes as needed to minimize construction impacts to existing communities. Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
AQ-1 Ctnd:					Locate equipment and materials storage sites as far away from residential and park uses as practical. Keep construction areas clean and orderly. Establish Environmentally Sensitive Areas (ESAs) or their equivalent near sensitive air receptors within which construction activities involving extended idling of diesel equipment would be prohibited, to the extent feasible. Use track-out reduction measures such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic. Cover all transported loads of soils and wet materials prior to transport, or provide adequate freeboard (space from the top of the material to the top of the truck) to minimize emission of dust (particulate matter) during transportation. Promptly and regularly remove dust and mud that are deposited on paved, public roads due to construction activity and traffic to decrease particulate matter. Route and schedule construction traffic to avoid peak travel times as much as possible, to reduce congestion and related air quality impacts caused by idling vehicles along local roads. Install mulch or plant vegetation as soon as practical after grading to reduce windblown particulate in the area. Be aware that certain methods of mulch placement, such as straw blowing, may themselves cause dust and visible emission issues and may need to use controls such as dampened straw.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
Traffic and Transportation					
T-1	Temporary traffic delays and disruptions due to construction	Same as Alternative 5, Option 1	Design/Construction	Caltrans and/or Contractor	Complete a Traffic Management Plan (TMP) to plan detours and utilize Information Technology Systems (ITS), and public advisory tools to inform motorists for trip planning purposes.
Biological Resources					
	Wetlands and Other Waters				
WW-1	Permanent impacts to 0.03 ac of wetlands and temporary impacts to 0 .13 ac of wetlands	Same as Alternative 5, Option 1	Design	Caltrans/USACE	Temporary and permanent impacts to wetlands and waters will be avoided to the fullest extent feasible. The permanent loss of wetlands and waters will be mitigated at a 1:1 ratio. Caltrans will obtain an USACE 404 Nationwide Permit 14 and a 1602 Streambed Alteration Agreement from the CDFW
	Permanent impacts to 0.01 ac of Waters of the U.S. and temporary impacts to 0.05 ac of Waters of the U.S	Permanent impacts to 0.02 ac of Waters of the U.S. and temporary impacts to 0.05 ac of Waters of the U.S.	Design /Construction	CDFW	
	Natural Communities				
B-1	Potential removal, or cutting to stump level, of 76 trees, including 55 of which are native	Same as Alternative 5, Option 1	Construction	CDFW/Caltrans	Construction activities would be limited to the smallest area possible. A clear delineation of the construction will be incorporated into the project plans and specifications. Fencing will be installed to protect environmentally sensitive areas (ESAs) and confine workers and equipment to

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					designated construction zones. Caltrans will mitigate 23 riparian trees at a 3:1 ratio on- or off-site and 53 non-riparian trees at a 1:1 ratio on- or off-site. If there is an instance where a tree removal is considered both a biological and visual resource impact, then the greater of the two replacement ratios will be implemented. Caltrans will plant a total of 122 replacement trees. These trees will be planted in areas away from highway impacts. These trees would be planted away from highway impacts, onsite or offsite, or purchased mitigation credits.
B-2	Clean Water Act (CWA) compliance	Same as Alternative 5, Option 1	Design	Caltrans/RWBQB	CWA 401 Permit from SFBRWQCB
Animal Species					
B-3	Some Swainson's hawk {protected by the Migratory Bird Treaty Act	Same as Alternative 5, Option 1	Design/Construction	Caltrans/ Contractor/NOAA/	Consultation with CDFW will occur

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
	(MBTA) and a listed threatened species under the California Endangered Species Act (CESA)} habitat near the project area may be taken/ impacted if the removal of trees on the bank of Suscol Creek occurs, however no known nests occur within 600 feet of the project study area.			USFWS/ CDFW	if any nest trees are impacted. Hawk nest surveys will occur at least 1 breeding season prior to construction in order to be able to plan ahead. For active nests, no work will occur within 600 feet of Swainson's hawk nests, 300 feet of raptor species, and within 50 feet of other species protected under the Migratory Bird Treaty Act and California Fish and Game Codes 3503, 3513, and 3800.
B-4	Migratory birds may try to nest on the ground, on structures, or in trees, shrubs or other vegetation within the project limits.	Same as Alternative 5, Option 1	Design/Construction	Caltrans/ Contractor/NOAA/ USFWS/ CDFW	In accordance with the Migratory Bird Treaty Act (MBTA), a survey of active migratory bird nests will be conducted in potentially affected trees and shrubs just prior to the beginning of construction. California Department of Fish and Wildlife (CDFW) will be notified of any occupied bird nests in impacted trees prior to their removal and Caltrans will work with CDFW to discuss relocation if necessary. If construction is scheduled during the nesting season, which from February 15 through August 31 in Caltrans' Standard plans for most migratory birds in the San Francisco Bay Area, a Caltrans biologist will conduct pre-construction bird surveys before work begins. If the biologist determines that migratory birds

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					are nesting within the zone of potential disturbance, then construction should be rescheduled to avoid the nesting season. If it is not possible to schedule construction to occur between September and the end of December, then the biologist, in consultation with the CDFW, shall determine the extent of a buffer zone Work is not allowed within the buffer zones, but work can proceed in all other areas. An alternative measure will allow vegetation removal during the non-breeding season (Breeding season is February 15 to August 31).
Threatened and Endangered Species					
B-5	Potential for temporary impacts to Central California Coast Steelhead (CCCS)	Same as Alternative 5, Option 1	Design/Construction	Caltrans/ Contractor /USFWS/ CDFW	The following measures are intended to avoid the potential for temporary impacts to CCCS: Work in the Suscol Creek riparian area during low-flow periods between June 1 and October 31 to avoid impacts to CCCS during the migratory season. Store all equipment outside of Suscol

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					Creek. Install a fence that will outline and protect ESAs prior to the start of construction, and remain on-site until job completion. Fence off any pools located in the project area during construction. Install silt fenced on the slopes adjacent to the work area to prevent silt from entering the watershed. The need for water diversion or dewatering is not anticipated. If it is determined that work within the wetted areas of Suscol Creek is necessary or that areas below OHWM may be affected, Section 7 consultation with NMFS will be initiated Falsework beams that span the creek would be used in place of installing falsework piles into the stream channel.
B-5 Ctnd:					Erosion controls would be maintained during construction. All materials used to maintain flow and divert water from the project area during the construction period would be removed from the streambed at the completion of the construction project. All excess soil would be disposed of at an approved upland site. Caltrans would plant all slopes

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					affected by the project with native grasses, shrubs, and trees to stabilize the slopes against erosion.
B-6	May disrupt dispersal, entrap, harass, and cause mortality to California Red Legged Frog (CRLF) due to impacts to CRLF potential habitat. May permanently impact 9.21 ac and temporarily 11.99 ac of CRLF potential habitat.	May disrupt dispersal, entrap, harass, and cause mortality to California Red Legged Frog (CRLF) due to impacts to CRLF potential habitat. May permanently impact 9.15 ac and temporarily impact 12.82 ac of CRLF potential habitat.	Construction	Caltrans/ Contractor /USFWS/ CDFW	For seasonal avoidance of the CRLF, construction will not occur from November 1 through May 31 near drainages rated as high quality CRLF aquatic habitat to the maximum extent practicable. Suitable habitat would be avoided with the use of ESA fencing. Caltrans proposes to mitigate temporary impacts at a 1:1 ratio. Mitigation would be onsite through site restoration. The remainder would be mitigated through the purchase of credits at a mitigation bank. For permanent impacts, Caltrans proposes to mitigate all impacts off-site at a 3:1 ratio through purchasing credits at a mitigation bank. Caltrans will seek a Biological Opinion (BO) for the project from

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					the United States Fish and Wildlife Service (USFWS) and will implement appropriate avoidance and minimization measures. Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area.
B-7	The project would affect Contra Costa Goldfield Critical Habitat. 4.63 ac would be permanently affected and 2.78 ac would be temporarily affected	The project would affect Contra Costa Goldfield Critical Habitat. 3.23 ac would be permanently affected and 2.85 ac would be temporarily affected.	Construction	Caltrans/ Contractor /USFWS	During Project Development, Caltrans redesigned a portion of the project to avoid impacts to the CCGF. Environmentally Sensitive Area (ESA) fencing will be used to protect CCGF and CCGF Critical Habitat. This area will be clearly marked to avoid inadvertent encroachment of personnel or equipment. Caltrans will seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS). Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area. Erosion control measures will be

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					implemented to minimize the potential for stormwater runoff or other construction debris to enter suitable habitat adjacent to the construction zone. No hydromodification will occur to the vernal pools with CCGF east of SR 221.Construction-related dust will be managed using Caltrans standard BMPs, including water trucks and appropriate speed limits**.**
	Hazardous Materials				
HM-1	Construction activities could result in workers becoming exposed to ADL due to disturbance of the surface soil adjacent to the roadway.	Same as Alternative 5, Option 1.	Design/Construction	Caltrans/Contractor	A soil investigation will be conducted to determine to what extent ADL has affected soils that will be excavated as part of the proposed project. This investigation will include screening for additional metals and some organic compounds, such as fuel hydrocarbons and pesticides, to confirm, or refute, the supposition that there are no contamination issues related to them. The

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					investigation for ADL will be performed in accordance with the Department's Lead Testing Guidance Procedure. The analytical results will be compared against applicable hazardous waste criteria. Based on analytical results, the investigation will provide recommendations regarding management and disposal of affected soils in the project area, including the reuse potential of ADL-affected soil during project construction. The provisions of a variance granted to Caltrans by the California Department of Toxic Substances Control (DTSC) in July 2009 (or any subsequent variance in effect when the project is constructed) regarding ADL-affected hazardous waste soil will be followed. The construction contractor will be required to utilize a certified industrial hygienist-approved lead compliance plan to disclose the presence of lead-impacted soil and to provide measures and practices for minimizing worker exposure.
Mitigation Measures for Potentially Significant Impacts (CEQA)					
C-1		*Same as Alternative 5, Option 1*	*Construction*	*Caltrans and/or Contractor*	*MOA has been executed. Implement Memorandum of*

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
	Adverse effect to archaeological site CA-NAP-15/H due to proximity to construction				*Agreement to recover significant data that could be unearthed during construction. 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, State Health and Safety Code Section 7050.5 and Public Resource Code Section 5097.98 will be followed*
C-2	*Construction activities can impact paleontologically sensitive geologic units when vehicles or other work equipment impacts previously undisturbed sediments by excavating, grading, or crushing bedrock exposed in or underlying a project. Sensitive formations are present in the project area and excavation will extend into these formations.*	*Same as Alternative 5, Option 1*	*Construction*	*Caltrans and/or Contractor*	*A Paleontological Mitigation Plan will be prepared to define the specific mitigation measures and methods that will be implemented during construction.*
B-1	*Potential removal, or cutting to stump level, of 76 trees, including 55 of which are native*	*Same as Alternative 5, Option 1*	*Design/Construction*	*Caltrans and Contractor*	Construction activities would be limited to the smallest area possible. A clear delineation of the construction will be incorporated into the project plans and specifications. Fencing will be installed to protect environmentally sensitive areas (ESAs) and confine workers and equipment to

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					designated construction zones. Caltrans will mitigate 23 riparian trees at a 3:1 ratio on- or off-site and 53 non-riparian trees at a 1:1 ratio on- or off-site. Caltrans will plant a total of 122 replacement trees. These trees will be planted in areas away from highway impacts. These trees would be planted away from highway impacts, onsite or offsite, or purchased mitigation credits.
B-6	May disrupt dispersal, entrap, harass, and cause mortality to California Red Legged Frog (CRLF) due to impacts to CRLF potential habitat. May permanently impact 9.21 ac and temporarily 11.99 ac of CRLF potential habitat.	May disrupt dispersal, entrap, harass, and cause mortality to California Red Legged Frog (CRLF) due to impacts to CRLF potential habitat. May permanently impact 9.15 ac and temporarily impact 12.82 ac of CRLF potential habitat.	*Construction*	*Caltrans/USFWS/ Contractor*	For seasonal avoidance of the CRLF, construction will not occur from November 1 through May 31 near drainages rated as high quality CRLF aquatic habitat to the maximum extent practicable. Suitable habitat would be avoided with the use of ESA fencing. Caltrans proposes to mitigate temporary impacts at a 1:1 ratio. Mitigation would be onsite through site restoration. The remainder would be mitigated through the purchase of credits at a mitigation bank. For permanent impacts, Caltrans proposes to mitigate all impacts off-site at a 3:1 ratio through purchasing credits at a mitigation bank.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					Caltrans will seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS) and will implement appropriate avoidance and minimization measures. Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area.
B-7	*The project would affect Contra Costa Goldfield Critical Habitat. 4.63 ac would be permanently affected and 2.78 ac would be temporarily affected.*	*The project would affect Contra Costa Goldfield Critical Habitat. 3.23 ac would be permanently affected and 2.85 ac would be temporarily affected.*	*Construction*	*Caltrans/USFWS/ CDFW/Contractor*	During Project Development, Caltrans redesigned a portion of the project to avoid impacts to the CCGF. Environmentally Sensitive Area (ESA) fencing will be used to protect CCGF and CCGF Critical Habitat. This area will be clearly marked to avoid inadvertent encroachment of personnel or equipment. Caltrans will seek a Biological Opinion (BO) for the project from the United States Fish and Wildlife Service (USFWS). Caltrans would consult with the California Department of Fish and Wildlife (CDFW) and the USFWS to develop additional avoidance and protection measures to potential CRLF habitat locations within the project area.

RESOURCE NUMBER	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 1	ENVIRONMENTAL CONSEQUENCES Alternative 5, Option 2	TIMING/ PHASE	RESPONSIBLE AGENCY	AVOIDANCE AND MINIMIZATION MEASURES
					Erosion control measures will be implemented to minimize the potential for stormwater runoff or other construction debris to enter suitable habitat adjacent to the construction zone. No hydromodification will occur to the vernal pools with CCGF east of SR 221.Construction-related dust will be managed using Caltrans standard BMPs, including water trucks and appropriate speed limits.

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Appendix E Summary Floodplain Encroachment Report

SUMMARY FLOODPLAIN ENCROACHMENT REPORT*

Dist. 04 Co. Napa Rte. 29/221 P.M. 29: PM 5.0/6.2 221: PM 0.0/0.6
Project No.: EA 28120 0 Bridge No. _____
Limits: _____

Floodplain Description: Within the limits of this project, a 100 year flow is contained within Soscol Creek

		No	Yes
1.	Is the proposed action a longitudinal encroachment of the base floodplain?	✓	
2.	Are the risks associated with the implementation of the proposed action significant?	✓	
3.	Will the proposed action support probable incompatible floodplain development?	✓	
4.	Are there any significant impacts on natural and beneficial floodplain values?	✓	
5.	Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.	✓	
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).	✓	
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain. The proposed project is not located within a FEMA base floodplain	✓	

PREPARED BY:

Kathleen Reilly — 1/28/10
Signature - Dist. Hydraulic Engineer — Date

Yolanda Rivas — 1/29/2010
Signature - Dist. Environmental Branch Chief — Date

[illegible] — 1/30/2010
Signature - Dist. Project Engineer — Date

* Same as Figure 804.7B Floodplain Evaluation Report Summary located in Chapter 804 of the Highway Design Manual

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Appendix F Federal Endangered and Threatened Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825

October 6, 2014

Document Number: 141006103704

Andrew Amacher
Caltrans
111 Grand Avenue
Oakland, CA 94612

Subject: Species List for Soscol Junction Project (EA 28120)

Dear: Mr. Amacher

We are sending this official species list in response to your October 6, 2014 request for information about endangered and threatened species. The list covers the California counties and/or U.S. Geological Survey 7½ minute quad or quads you requested.

Our database was developed primarily to assist Federal agencies that are consulting with us. Therefore, our lists include all of the sensitive species that have been found in a certain area *and also ones that may be affected by projects in the area*. For example, a fish may be on the list for a quad if it lives somewhere downstream from that quad. Birds are included even if they only migrate through an area. In other words, we include all of the species we want people to consider when they do something that affects the environment.

Please read Important Information About Your Species List (below). It explains how we made the list and describes your responsibilities under the Endangered Species Act.

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be January 04, 2015.

Please contact us if your project may affect endangered or threatened species or if you have any questions about the attached list or your responsibilities under the Endangered Species Act. A list of Endangered Species Program contacts can be found http://www.fws.gov/sacramento/es/Branch-Contacts/es_branch-contacts.htm.

Endangered Species Division

U.S. Fish & Wildlife Service
Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 141006103704

Current as of: October 6, 2014

Quad Lists

Listed Species

Invertebrates

Branchinecta conservatio
- Conservancy fairy shrimp (E)

Branchinecta lynchi
- Critical habitat, vernal pool fairy shrimp (X)
- vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
- valley elderberry longhorn beetle (T)

Speyeria callippe callippe
- callippe silverspot butterfly (E)

Speyeria zerene myrtleae
- Myrtle's silverspot butterfly (E)

Syncaris pacifica
- California freshwater shrimp (E)

Fish

Acipenser medirostris
- green sturgeon (T) (NMFS)

Eucyclogobius newberryi
- tidewater goby (E)

Hypomesus transpacificus
- Critical habitat, delta smelt (X)
- delta smelt (T)

Oncorhynchus kisutch
- coho salmon - central CA coast (E) (NMFS)

Oncorhynchus mykiss
- Central California Coastal steelhead (T) (NMFS)
- Central Valley steelhead (T) (NMFS)
- Critical habitat, Central California coastal steelhead (X) (NMFS)
- Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
- Central Valley spring-run chinook salmon (T) (NMFS)
- Critical habitat, winter-run chinook salmon (X) (NMFS)
- winter-run chinook salmon, Sacramento River (E) (NMFS)

http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists.cfm 10/6/2014

Amphibians

Ambystoma californiense

California tiger salamander, central population (T)

Rana draytonii

California red-legged frog (T)

Critical habitat, California red-legged frog (X)

Reptiles

Masticophis lateralis euryxanthus

Alameda whipsnake [=striped racer] (T)

Critical habitat, Alameda whipsnake (X)

Thamnophis gigas

giant garter snake (T)

Birds

Charadrius alexandrinus nivosus

western snowy plover (T)

Pelecanus occidentalis californicus

California brown pelican (E)

Rallus longirostris obsoletus

California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Strix occidentalis caurina

northern spotted owl (T)

Mammals

Reithrodontomys raviventris

salt marsh harvest mouse (E)

Plants

Blennosperma bakeri

Baker's stickyseed [=Sonoma Sunshine] (E)

Castilleja affinis ssp. neglecta

Tiburon paintbrush (E)

Cordylanthus mollis ssp. mollis

soft bird's-beak (E)

Lasthenia conjugens

Contra Costa goldfields (E)

Critical habitat, Contra Costa goldfields (X)

Limnanthes vinculans

Sebastopol meadowfoam (E)

Trifolium amoenum

showy Indian clover (E)

Proposed Species

Plants

Cordylanthus mollis ssp. mollis

Critical habitat, soft bird's-beak (PX)

http://www.fws.gov/sacramento/ES_Species/Lists/es_species_lists.cfm 10/6/2014

Appendix G California Natural Diversity Database (CNDDB)

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Scientific Name - Portrait
Soscol 9 quads, 10.7.2014

	Scientific Name/Common Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	***Accipiter cooperii*** Cooper's hawk	ABNKC12040			G5	S3	
2	***Adela oplerella*** Opler's longhorn moth	IILEE0G040			G2	S2	
3	***Agelaius tricolor*** tricolored blackbird	ABPBXB0020			G2G3	S1S2	SC
4	***Agrostis hendersonii*** Henderson's bent grass	PMPOA040K0			G2Q	S2	3.2
5	***Allium peninsulare var. franciscanum*** Franciscan onion	PMLIL021R1			G5T1	S1	1B.2
6	***Ambystoma californiense*** California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	SC
7	***Amorpha californica var. napensis*** Napa false indigo	PDFAB08012			G4T2	S2	1B.2
8	***Andrena blennospermatis*** Blennosperma vernal pool andrenid bee	IIHYM35030			G2	S2	
9	***Antrozous pallidus*** pallid bat	AMACC10010			G5	S3	SC
10	***Aquila chrysaetos*** golden eagle	ABNKC22010			G5	S3	
11	***Arctostaphylos canescens ssp. sonomensis*** Sonoma canescent manzanita	PDERI04066			G3G4T2	S2	1B.2
12	***Ardea herodias*** great blue heron	ABNGA04010			G5	S4	
13	***Astragalus tener var. tener*** alkali milk-vetch	PDFAB0F8R1			G2T2	S2	1B.2
14	***Athene cunicularia*** burrowing owl	ABNSB10010			G4	S3	SC
15	***Atriplex joaquinana*** San Joaquin spearscale	PDCHE041F3			G2	S2	1B.2
16	***Balsamorhiza macrolepis*** big-scale balsamroot	PDAST11061			G2	S2	1B.2
17	***Blennosperma bakeri*** Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
18	***Blepharizonia plumosa*** big tarplant	PDAST1C011			G2	S2	1B.1
19	***Branchinecta lynchi*** vernal pool fairy shrimp	ICBRA03030	Threatened		G3	S2S3	
20	***Brodiaea leptandra*** narrow-anthered brodiaea	PMLIL0C022			G3?	S3?	1B.2
21	***Buteo regalis*** ferruginous hawk	ABNKC19120			G4	S3S4	
22	***Buteo swainsoni*** Swainson's hawk	ABNKC19070		Threatened	G5	S3	
23	***Calasellus californicus*** An isopod	ICMAL34010			G2	S2	

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Appendix H Memorandum of Agreement

MEMORANDUM OF AGREEMENT
BETWEEN THE
CALIFORNIA DEPARTMENT OF TRANSPORTATION AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE SOSCOL INTERCHANGE IMPROVEMENT PROJECT,
STATE ROUTE 29/12 AND STATE ROUTE 221, SOUTH OF THE CITY OF
NAPA, NAPA COUNTY, CALIFORNIA

WHEREAS, the Federal Highway Administration (FHWA), has assigned and the California Department of Transportation (Caltrans) has assumed FHWA responsibility for environmental review, consultation, and coordination under the provisions of the *Memorandum of Understanding (MOU) between the Federal Highway Administration and the California Department of Transportation Concerning the State of California's participation in the Surface Transportation Project Delivery Pilot Program*, which became effective on July 1, 2007 and applies to the project; and

WHEREAS, Caltrans, has determined that the Soscol Interchange Improvement Project, State Route 29/12 (Post Miles 5.0/7.1) and 221 (Post Miles 0.0/0.7), (California Department of Transportation Expenditure Authorization 04-28120) in Napa County, California is an Undertaking; and

WHEREAS, This Undertaking will have an adverse effect on archaeological site CA-NAP-15/H, which Caltrans has determined, in consultation with the California State Historic Preservation Officer (SHPO), to be eligible for inclusion in the National Register of Historic Places (National Register) and therefore, an historic property as defined at 36 CFR § 800.16(1)(1); and

WHEREAS, Caltrans has consulted with the California State Historic Preservation Officer (SHPO) pursuant to stipulations X.C and XI of the January 2004 *Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California* (PA), and where the PA so directs, in accordance with 36 CFR Part 800, the regulations implementing Section 106 of the National Historic Preservation Act of 1966 (16 USC Section 470f), as amended (NHPA) regarding the Undertaking's effect on the historic property, and has notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding in pursuant to 36 CFR § 800.6(a)(1); and

WHEREAS, Caltrans has thoroughly considered alternatives to the Undertaking, and has determined that the statutory and regulatory constraints on the design of the Undertaking preclude the possibility of avoiding adverse effects to archaeological site CA-NAP-15/H during the Undertaking's implementation, and has further determined that it will resolve the adverse effect of the Undertaking on the subject historic property through the execution and implementation this Memorandum of Agreement (MOA); and

WHEREAS, Caltrans District 4 (District 4) has participated in the consultation process and has been invited to concur in this MOA; and

WHEREAS, Caltrans has initiated consultation with the Mishewal Wappo Tribe of Alexander Valley, Cortina Band of Wintun Indians, Rumsey Indian Rancheria of Wintun, and the Suscol Intertribal Council, regarding the Undertaking and its adverse effect on CA-NAP-15/H; will continue to consult with them, and will afford them, should they so desire, the further opportunity to more directly and actively participate in the implementation of the Undertaking itself and this MOA;

NOW, THEREFORE, Caltrans and the SHPO agree that, upon Caltrans' decision to proceed with the Undertaking, Caltrans shall ensure that the Undertaking is implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on the historic property, and that these stipulations shall govern the Undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

Caltrans shall ensure that the following stipulations are implemented:

I. AREA OF POTENTIAL EFFECTS

A. The Area of Potential Effects (APE) for the Undertaking is depicted in Figure 1 of the August 2007 *Archaeological Treatment Plan for Data Recovery Excavations at CA-NAP/15H (Routes 29/12 and 221)*. The APE encompasses the areas of the "project limits" and the "archaeological site limits". The Area of Direct Impact (ADI) encompasses the "defined work area boundary" depicted in Figure 1. The APE was signed by Meg Scantlebury and Jennifer Darcangelo on February 28, 2006.

B. If modifications to the Undertaking subsequent to the execution of this MOA necessitate the revision of either the APE or the ADI, Caltrans will consult with District 4 and the SHPO to facilitate mutual agreement on the subject revisions. If Caltrans, District 4 and the SHPO cannot reach such agreement, then the parties of this MOA shall resolve the dispute in accordance with stipulation VII.C below. If Caltrans, District 4, and the SHPO reach mutual agreement on the proposed revisions, then Caltrans will submit to SHPO a final map of the revisions, consistent with the requirements of stipulations VIII.A and XVI.A of the PA, no later than 30 days following such agreement.

II. TREATMENT OF CA-NAP-15/H

A. Caltrans has prepared a final version of the Treatment Plan that takes into account the adverse effect of the Undertaking on archaeological site CA-NAP-15/H and addresses any discoveries or unanticipated effects that may result from the Undertaking's

implementation. Caltrans shall ensure that the adverse effects of the Undertaking on archaeological site CA-NAP-15/H are resolved by implementing and completing the 2007 Archaeological Treatment Plan for Data Recovery Excavations at CA-NAP/15H (Routes 29/12 and 221) that is Attachment 1 to this MOA. Data recovery is prescribed for archaeological deposits contributing to the National Register eligibility of these historic properties that lie within the Undertaking's construction ADI.

B. In order to eliminate or minimize the potential to affect contributing deposits of the site where data recovery is not prescribed, Caltrans will protect those contributing deposits of CA-NAP-15/H by identifying them as environmentally sensitive areas (ESA's), which shall be described in information included in the final construction plans of the Undertaking, and by enclosing in the temporary fencing the remainder of the site areas located outside the ADI. Caltrans shall further ensure that the integrity of the fence line as installed will be monitored by the archaeologist throughout the duration of construction activities in the site vicinity.

C. Caltrans may amend the Treatment Plan. Such amendment will not require amendment of this MOA. If project plans change such that an amendment is necessary, Caltrans will prepare an amendment to the Treatment Plan that takes into account anticipated impacts to historic properties that were not previously considered. Caltrans will send amendments to consulting parties to this MOA for a 30-day review period.

D. In order to provide for refining of construction plans, Caltrans will submit a Phase III Proposal to the MOA parties. The Proposal will contain a specific work plan tied to construction impacts. The MOA parties will be afforded 15 days following the receipt of the draft Phase III Proposal to submit written comments to Caltrans. Failure of these parties to respond within this time frame shall not preclude Caltrans from authorizing revisions to the draft Phase III Proposal, as Caltrans may deem appropriate.

E. Caltrans will not authorize the execution of any Undertaking activity that may affect (36 CFR § 800.16(i)) historic properties in the Undertaking's APE prior to the completion of the fieldwork that the Treatment Plan prescribes.

III. REPORTING REQUIREMENTS AND RELATED REVIEWS

A. Within 60 days after Caltrans has determined that all fieldwork required under stipulation II has been completed, Caltrans will ensure preparation, and concurrent distribution to the other MOA parties, for review and comment, a brief letter report that summarizes the field efforts and the preliminary findings that result from them.

B. Within 18 months after Caltrans has determined that all fieldwork required by stipulation II.A. has been completed, Caltrans will ensure preparation, and subsequent concurrent distribution to the other MOA parties, for review and comment, a draft technical report that documents the results of implementing and completing the Treatment Plan. The other MOA parties will be afforded 30 days following receipt of the draft technical report to

submit any written comments to Caltrans. Failure of these parties to respond within this time frame shall not preclude Caltrans from authorizing revisions to the draft technical report, as Caltrans may deem appropriate. Caltrans will provide the other MOA parties with written documentation indicating whether and how the draft technical report will be modified in accordance with any comments received from the other MOA parties. Unless any MOA party objects to this documentation in writing to Caltrans within 30 days following receipt, Caltrans may modify the draft technical report as Caltrans may deem appropriate. Thereafter, Caltrans may issue the technical report in final form and distribute this document in accordance with paragraph C. of this stipulation.

C. Copies of the final technical report documenting the results of Treatment Plan implementation will be distributed by Caltrans to the other MOA parties, to the Northwest Information Center of the California Historic Resources Information System (CHRIS) Regional Information Center, and to Native American parties subject to the terms of stipulation III.

IV. NATIVE AMERICAN CONSULTATION

Caltrans has consulted with the Mishewal Wappo Tribe of Alexander Valley, Cortina Band of Wintun Indians, Rumsey Indian Rancheria of Wintun, and the Suscol Intertribal Council regarding the proposed Undertaking and its effect on historic properties, will continue to consult with them, and will afford them, should they so desire, the opportunity to participate in the implementation of this MOA and the Undertaking. This stipulation and the MOA not withstanding, FHWA shall retain responsibility for conducting direct government-to-government consultation with federally recognized Indian tribes, should the tribe so desire.

V. TREATMENT OF HUMAN REMAINS OF NATIVE AMERICAN ORIGIN

The MOA parties agree that human remains and related items discovered during the implementation of the terms of this MOA and of the Undertaking will be treated in accordance with the requirements of § 7050.5(b) of the California Health and Safety Code. If, pursuant to § 7050.5(c) of the California Health and Safety Code, the county coroner/medical examiner determines that the human remains are or may be of Native American origin, then the discovery shall be treated in accordance with the provisions of § 5097.98 (a) - (d) of the California Public Resources Code. Caltrans will ensure that to the extent permitted by applicable law and regulation, the views of the Most Likely Descendant(s) are taken into consideration when decisions are made about the disposition of other Native American archaeological materials and records.

VI. DISCOVERIES AND UNANTICIPATED EFFECTS

If Caltrans determines during the implementation of the Treatment Plan or after construction of the Undertaking has commenced, that either the implementation of the Treatment Plan or

the Undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, Caltrans will address the discovery or unanticipated effect in accordance with 36 CFR § 800.13(b)(3). Caltrans at its discretion may hereunder assume any discovered property to be eligible for inclusion in the National Register in accordance with 36 CFR § 800.13(c).

I. ADMINISTRATIVE PROVISIONS

A. STANDARDS

1. **Definitions**. The definitions provided at 36 CFR § 800.16 are applicable throughout this MOA.

2. **Professional Qualifications**. Caltrans will ensure that only individuals meeting the Secretary of the Interior's Professional Qualification Standards (PQS) (48 FR 44738-39) in the relevant field of study carry out or review appropriateness and quality of the actions and products required by stipulations I.B, II, III, V, and VI in this MOA. However, nothing in this stipulation may be interpreted to preclude Caltrans or any agent or contractor thereof from using the properly supervised services of who do not meet the PQS.

3. **Documentation Standards.** Written documentation of activities prescribed by stipulations I.B, II, III, V, and VI of this MOA shall conform to *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740) as well as to applicable standards and guidelines established by the SHPO.

4. **Curation and Curation Standards.** Caltrans shall ensure that, to the extent permitted under § 5097.98 and § 5097.991 of the California Public Resources Code, the materials and records resulting from the activities prescribed by this MOA are curated in accordance with 36 CFR Part 79.

B. CONFIDENTIALITY

The MOA parties acknowledge that the historic property covered by this MOA is subject to the provisions of § 304 of the National Historic Preservation Act of 1966 and § 6254.10 of the California Government Code (Public Records Act), relating to the disclosure of archaeological site information and, having so acknowledged, will ensure that all actions and documentation prescribed by this MOA are consistent with said sections.

C. RESOLVING OBJECTIONS

1. Should any MOA party object at any time in writing to the manner in which the terms of this MOA are implemented, to any action carried out or proposed with respect to

implementation of the MOA (other than the Undertaking itself), or to any documentation prepared in accordance with and subject to the terms of this MOA, Caltrans shall immediately notify the other MOA parties of the objection, request their comments on the objection within 15 days following the receipt of Caltrans' notification, and proceed to consult with the objecting party for no more than 30 days to resolve the objection. Caltrans will honor the request of the other parties to participate in the consultation and will take any comments provided by those parties into account.

2. If the objection is resolved during the 30-day consultation period, Caltrans may proceed with the disputed action in accordance with the terms of such resolution.

3. If at the end of the 30-day consultation period, Caltrans determines that the objection cannot be resolved through such consultation, then Caltrans shall forward all documentation relevant to the objection to the ACHP, including Caltrans' proposed response to the objection, with the expectation the ACHP will, within thirty (30) days after receipt of such documentation:

   a. Advise Caltrans that the ACHP concurs with Caltrans' proposed response to the objection, whereupon Caltrans will respond to the objection accordingly. The objection shall thereby be resolved; or

   b. Provide Caltrans with recommendations, which Caltrans will take into account in reaching a final decision regarding its response to the objection. The objection shall thereby resolved; or

   c. Notify Caltrans that the objection will be referred for comment pursuant to 36 CFR § 800.7 (c) and proceed to refer the objection and comment. Caltrans shall take the resulting comments into account in accordance with 36 CFR § 800.7 (c)(4) and Section 110(1) of the NHPA. The objection shall thereby be resolved.

4. Should the ACHP not exercise on the above options within 30 days after receipt of all pertinent documentation, Caltrans may assume the ACHP's concurrence in its proposed response to the objection and proceed to implement the response. The objection shall thereby be resolved.

5. Caltrans shall take into account any of the ACHP's recommendations or comments provided in accordance with this stipulation with reference only to the subject of the objection. Caltrans' responsibility to carry out all actions under this MOA that are not the subjects of the objection shall remain unchanged.

6. At any time during implementation of the measures stipulated in this MOA, should a member of the public raise an objection in writing pertaining to such implementation to any signatory party to this MOA, that signatory party shall immediately notify Caltrans. Caltrans shall immediately notify the other signatory parties in writing of the objection. Any signatory party to this MOA may choose to comment in writing on

the objection to Caltrans. Caltrans shall establish a reasonable time frame for this comment period. Caltrans shall consider the objection, and in reaching its decision, Caltrans will take all comments from the other signatory parties into account. Within 15 days following the closure of the comment period, Caltrans will render a decision regarding the objection and respond to the objecting party. Caltrans will promptly notify the other signatory parties of its decision in writing, including a copy of the response to the objecting party. Caltrans' decision regarding resolution of the objection will be final. Following issuance of its final decision, Caltrans may authorize the action subject to dispute hereunder to proceed in accordance with the terms of the decision.

7. Caltrans shall provide all parties to this MOA, the ACHP, if the ACHP commented, and any parties that have objected pursuant to section C.6 of this stipulation, with a copy of its final written decision regarding any objection addressed pursuant to this stipulation.

8. Caltrans may authorize any action subject to objection under this stipulation to proceed after the objection has been resolved in accordance with this stipulation.

D. AMENDMENTS

Any signatory party to this MOA may propose that this MOA be amended, whereupon all signatory parties shall consult for no more than 30 days to consider such amendment. The amendment will be effective on the date a copy signed by all of the original signatories is filed with the ACHP. If the signatories cannot agree to appropriate terms to amend the MOA, any signatory may terminate the agreement in accordance with Stipulation VII.E below.

E. TERMINATION

9. If this MOA is not amended as provided for in section D of this stipulation, or if either signatory party proposes termination of this MOA for other reasons, the signatory party proposing termination shall, in writing, notify the other MOA parties, explain the reasons for proposing termination, and consult with the other MOA parties for at least 30 days to seek alternatives to termination. Such consultation shall not be required if Caltrans proposes termination because the Undertaking no longer meets the definition set forth in 36 CFR § 800.16(y).

10. Should such consultation result in an agreement on an alternative to termination, the signatory parties shall proceed in accordance with the terms of that agreement.

11. Should such consultation fail, the signatory party proposing termination may terminate this MOA by promptly notifying the other MOA parties in writing. Termination hereunder shall render this MOA without further force or effect.

12. If this MOA is terminated hereunder, and if Caltrans determines that the Undertaking

will nonetheless proceed, then Caltrans shall comply with the requirements of 36 CFR § 800.3-800.6.

F. DURATION OF THE MOA

1. Unless terminated pursuant to section E of this stipulation, or unless it is superseded by an amended MOA, this MOA will be in effect following execution by the signatory parties until Caltrans, in consultation with the other signatory parties, determines that all of its stipulations have been satisfactorily fulfilled.

2. The terms of this MOA shall be satisfactorily fulfilled within 10 years following the date the construction contract is awarded. If Caltrans determines that this requirement cannot be met, the MOA parties will consult to reconsider its terms. Reconsideration may include continuation of the MOA as originally executed, amendment, or termination. In the event of termination, Caltrans will comply with section E.4 of this stipulation, if it determines that the Undertaking will proceed notwithstanding termination of this MOA.

3. If construction has not been initiated within 10 years following execution of this MOA by the signatory parties, this MOA shall automatically terminate and have no further force or effect. In such event, Caltrans shall notify the other signatory parties in writing and, if it chooses to continue with the Undertaking, shall reinitiate review of the Undertaking in accordance with 36 CFR Part 800.

G. EFFECTIVE DATE

This MOA will take effect on the date that it has been executed by Caltrans and the SHPO.

EXECUTION of this MOA by Caltrans and the SHPO, its transmittal by Caltrans to the ACHP in accordance with 36 CFR § 800.6(b)(1)(iv), and subsequent implementation of its terms, shall evidence, pursuant to 36 CFR § 800.6(c), that this MOA is an agreement with the ACHP for purposes of Section 110(l) of the NHPA, and shall further evidence that Caltrans has afforded the ACHP an opportunity to comment on the Undertaking and its effect on historic properties, and that Caltrans has taken into account the effect of the Undertaking on historic properties.

SIGNATORY PARTIES:

CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

By _____ for _____ 7/16/08
Milford Wayne Donaldson, FAIA — Date
Title: State Historic Preservation Officer

CALIFORNIA DEPARTMENT OF TRANSPORTATION

By _____ for Jay Norvell _____ 7/16/08
Jay Norvell — Date
Chief, Division of Environmental Analysis

CONCURRING PARTY:

By _____ _____ 7-21-08
Bijan Sartipi, Director — Date
District 4, Oakland

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Appendix I Air Quality Conformity Task Force Concurrence

Air Quality Conformity Task Force
Summary Meeting Notes
July 28, 2011

Attendance:
Ginger Vagenas – EPA
Jeff – EPA
Mike Brady – Caltrans
Dick Fahey – Caltrans
Ted Matley – FTA
Stew Sonnenberg– FHWA
Michele Bellows – NV5/CCTA
Sasha Dansky – Mark Thomas and Company
Jon Tamimi – URS
Lynn McIntyre – URS
Rob Rees – Fehr and Peers
Dawn Cameron – Santa Clara County Roads and Airports
Mike Griffiths – Santa Clara County Roads and Airports
Scott Steinwert – Circle Point
Karin Bouler – Caltrans
Yolanda Rivas – Caltrans
Kelly Hirschberg – Caltrans
Glen Kinoshita - Caltrans
Ashley Nguyen – MTC
Brenda Dix - MTC
Sri Srinivasan - MTC
Glen Tepke - MTC
Earl Kaing - MTC

1. **Welcome and Self Introductions**: Brenda Dix (MTC) called the meeting to order at 9:35am. See attendance roster above. She went immediately into the agenda items for discussion.

2. **$PM_{2.5}$ Interagency Consultations:** To begin the interagency consultations for $PM_{2.5}$ project level conformity, Brenda Dix (MTC) asked each project sponsors to give a brief overview of the project prior to opening up the project for questions by the Task Force.

   POAQC Status Determinations
   California Department of Transportation (Caltrans): Napa 29/221 Soscol Flyover Project
   Kelly Hirschberg (Caltrans) is working with NCTPA on the environmental documents for this project. She explained that the project is located in Napa with SR12/Jameson Avenue to the South and Loma Avenue to the North. Currently there is an at grade intersection at the project location. The proposed project would construct a flyover, thus eliminating the intersection. Another option for the project includes keeping, but reworking the signalized intersection. The flyover would be 700 feet long and would allow SR29 to be a throughput with no stops. The project is in its draft environmental stage and funding sources are being sought to complete the project.

   Glen Kinoshita (Caltrans) handed out a new fact sheet for the project. He stated that the regional model for Napa was used for the traffic projections and 2009/2010 truck counts were used for current conditions. He commented that the project is not a POAQC since truck volumes are below the 8% or 10,000 AADT threshold and the levels are not expected to change due to the project. The project is needed because the intersection is currently saturated and there are higher than average rear-end accidents. The project itself will not increase heavy duty truck traffic. The current intersection is LOS F and with the project, in the opening year, it will increase to a LOS D. In the horizon year, the LOS is still F but the minutes of delay at the intersection are approximately half of what it would be in the no-

build scenario which equates to a significant reduction in emissions.The project is not a bus or rail project and there is no current SIP for PM 2.5 so the project does not qualify as a POAQC for those reasons.

Dick Fahey(Caltrans) and Ted Matley(FTA) had no questions and did not believe this project to be a POAQC.

Ginger Vagenas(EPA) stated that EPA does not think this is a POAQC but reminded everyone that the truck thresholds are not hard lines and should not be viewed as such.

Mike Brady (Caltrans) stated he did not see anything in this project that would be contributing to truck traffic. Since this project is not completely funded the NEPA documents cannot be approved but the project can move ahead as long as one of the two alternatives presented to this Task Force are what is finally adopted. If the project substantially changes then it will have to come back to the Task Force again.

Stew Sonnenberg (FHWA) believed that this is a good project and that it is not a POAQC.

Final Determination: EPA, FHWA, FTA, Caltrans, MTC and the remaining Task Force members concurred that this project s not a POAQC.

Contra Costa Transportation Authority (CCTA): I-680 Auxiliary Lanes

Rob Rees (Fehr and Peers) presented the project summary, noting that this project was environmentally cleared with a categorical exclusion in 2002. The complete project is a set of 3 auxiliary lanes with the segment before the task force being the middle, 2 mile segment between Crow Canyon and Sycamore Valley on Northbound and Southbound 680. The project cost is $37 million including replacing sound walls and retaining walls. The construction cost is about $25 million. It is funded through CCTA Measure C funds and should receive interstate maintenance discretionary funds. Truck volumes were 6% in 2009, are now down to 5%, and a continued reduction in truck volumes is anticipated. Under the no build conditions the LOS in the peak directions at the intersections affected by this project would be a D and F and the project will maintain those levels since the bottlenecks are outside of the corridor. In the non-peak direction the LOS would improve from D to C since bottlenecks do not exist in this direcetion.

Dick (Caltrans) asked why the truck volumes should continue to decrease over time? It was clarified that the truck decreases are due to the slightly greater increase in auto trips. Dick does not view this project as a POAQC.

Stew (FHWA) believes the project is not a POAQC. He asked if the auxiliary lanes are between consecutive interchanges, and the response is yes.

Mike (Caltrans) does not believe the project to be a POAQC but asked for better documentation in the future. He requested future documentation of why the truck traffic is decreasing. He also asked MTC if a 2 mile auxiliary lane would show up in their model as capacity increasing. Ashley (MTC) responded that MTC would code auxiliary lanes if they

were regionally significant. She was unsure about whether this specific project was coded in our model.

Ginger (EPA) stated that more documentation should be provided in the future regarding the horizon year conditions and the assumption of decreasing truck traffic. She asked if the length of the auxiliary lane would make it capacity increasing.

Rob (Fehr and Peers) clarified that the design year was 2025 and the original growth through the design year was assumed to be 38% from 2000 through 2025 but the trending percent is about 11-12% growth. The AADT from 2000 was 155,000 and is now 160,000 vehicles. The truck percentage is decreasing because the design year AADT is still based on the design year forecast. So the decline in truck traffic is based on the fact that truck traffic is trending lower than originally expected. With regards to the capacity increasing potential of the auxiliary lanes, he stated that the project is a local project that will not induce new trips. Also, there are high levels of congestion to the north and south so the corridor travel time will not be reduced. The project will reduce the high levels of rear-end collisions that occur in this road segment.

Mike (Caltrans) stated that if the auxiliary lane could be used as a passing lane then that would change the highway operations. The sponsor clarified that they did not see any improvements in travel time in the segment so it is not capacity increasing.

Ashley (MTC) suggested that the project be deemed not a POAQC pending additional documentation from the project sponsor. The federal agency representatives agreed to this approach.

Final Determination: FHWA, EPA, Caltrans, FTA, MTC and all of the members of the task force tentatively concurred that the project is not a POAQC pending additional documentation from the project sponsor.

Santa Clara County: Oregon Expressway Improvements
Dawn Cameron, and Mike Griffiths from Santa Clara County Roads and Airports presented this project. Dawn (SCC) stated that the project is primarily a safety and operational improvement project in Palo Alto. It does not affect intersections with LOS D, E, or F and it is not capacity increasing. The project does include upgrading traffic signals, providing pedestrian and bike crossings at the 7 intersections, and adding channelization within the existing ROW to separate left turning traffic from through traffic at 5 intersections. The main purpose of the project is to reduce bike and pedestrian conflicts with vehicles. At three unsignalized intersections vehicle left turns and crossings will be restricted as a safety measure. There is very little truck traffic in the area since the City of Palo Alto does not permit through traffic trucks in the area, only trucks making deliveries.

The task force had no questions related to this project.

Final Determination: EPA, FHWA, FTA, Caltrans, and MTC and the remaining Task Force members concurred that this project is not a POAQC.

Hot Spot Analysis Consultation

Alameda County Transportation Commission (ACTC): I-580 Corridor - Eastbound HOV/HOT Lanes

Lynn McIntyre (URS) representing Alameda CTC stated that the project was originally brought to the task force in May after which additional information was provided to the task force by the project sponsor. Upon receipt of this information, two follow-up calls were arranged with the task force members and project staff on June 10 and 29th. After those calls there was still no consensus on whether or not the project was a POAQC so the project sponsor decided to move ahead with a qualitative hot-spot analysis.

The project before the task force is both ACTC's HOT lane project, which consists of re-striping the road and installing tolling equipment, and ACTC's I-580 Eastbound auxiliary lanes project which is in the same area between Isabel Ave and North Livermore Ave and between North Livermore Ave and First St. The pavement will also be widened in some locations to accommodate the later construction of the express lanes. The two projects are environmentally separate because the schedule for adding the auxiliary lane project to the environmental documents for the HOT lanes is a little behind the express lane project schedule. The auxiliary lanes are being provided for safety purposes.

The two projects are under the same TIP number and would eventually have to come to the task force so the project sponsor has combined them in the hot-spot analysis to streamline the process with the task force.

Jon Tamimi (URS) presented the qualitative hot-spot analysis for the projects. He stated that PM 2.5 shows a decreasing trend at the Livermore monitoring station and in 2010 was below the daily standard. The project area is also well below the annual PM 2.5 standard. With the project there will be an increase in speeds and an increase in VMT in the build year leading to an increase in PM 2.5 emissions. However, in 2030 there is a decrease in emissions from no build to build conditions.

Jeff (EPA) reviewed the analysis and emphasized the conservative approach built into the assumptions. He stated that the project is about improving flow and speeds, not linking to other truck traffic routes. In 2030 there will be a decrease in emissions due to the fact that there are stricter regulations governing trucks at that time. The EMFAC 2007 model (which was used for the hot spot analysis) does not take the existing California truck rule into account which will decrease truck emissions even further so overall PM 2.5 levels will be lower then estimated even in the 2015 time horizon.

Stew (FHWA) asked why the 24 hour PM 2.5 measurements vary so between the years, he questioned if it was the weather or something else? Jon was not sure what led to the variations.

Mike (Caltrans) believed the hot-spot analysis to be a good analysis. He pointed out that in part of the analysis the sponsor did not have daily VMT and speeds so they multiplied peak hours by 24 which overstates the emissions. This contributes to the conservative approach taken in the analysis.

Dick (Caltrans) pointed out that ACTC was mentioned as the MPO for the region, which should be amended to MTC.

Lynn (URS) and Ashley (MTC) asked if the task force needed to determine if the project is a POAQC now that they had reviewed the hot-spot analysis?

Mike (Caltrans) clarified that by default the project will be considered a POAQC but the hot-spot analysis indicated that the project will not cause or contribute to a local violation of air quality standards.

Final Determination: EPA, FHWA, FTA, Caltrans, MTC and the remaining Task Force members concurred that this project meets the hot spot requirements in 40 CFR 93.116 and 93.126 for PM2.5 and that the project will not cause or contribute to a new violation of the federal PM 2.5 air quality standards.

$PM_{2.5}$ Conformity Exempt List Review

Ginger stated that EPA has concerns about 3 of the safety projects. These include SM-110048, SM-110051, and MRN110026. She stated that the projects would be better listed as channelization or signalization projects. The fact that they are funded through HSIP should not automatically qualify them as exempt from air quality conformity since they may be at LOS D, E, or F intersections and the traffic levels may be too high.

Sri Srinivasan (MTC) confirmed that these three projects are HSIP projects.

Mike (Caltrans) stated that the task force has permitted HSIP projects to have a free pass from conformity before.

Ginger (EPA) does not believe that the source of the project funding should permit an exemption from conformity.

Per Mike's request, Sri (MTC) stated that they would clarify in the future if a project is funded through HSIP when it is placed on the exempt list.

Ginger (EPA) said she would verify from the EPA perspective and will collaborate with FHWA to determine if the safety exemption can apply to signalization and channelization projects.

Mike (Caltrans) believes that MRN110026 should be exempt due to the fact that they are not adding signals or channelization, they are simply modifying it. The left turn phasing, and signal upgrades should not count as a new signal.

Ginger (EPA) referred to an email form OTAC that said that "adding a signal or changing a signal (changing a signal timing, adding a left turn signal at a specific intersection) constitutes a signalization project." Ashley (MTC) stated that this interpretation is too broad since signal timing is changed on a daily basis. Mike (Caltrans) stated that he believes a project should only trigger an assessment form if there is actually a new signal or channelization.

Sri (MTC) asked for clarification on how this issue is handled throughout the state, especially for projects listed in a group listing. Mike stated that projects still have to go

through a POAQC determination on a project by project basis when they are ready for NEPA.

Ashley (MTC) requested that offline consultation occur on this topic between EPA, FHWA, and Caltrans to clarify how to address HSIP projects especially those related to signalization and channelization projects. Ashley (MTC) feels that all of these projects will have limited adverse local air quality impacts and therefore we should not subject these projects to a more rigorous look. The three agencies agreed to the offline consultation.

Final Determination: EPA, FHWA, FTA, Caltrans, MTC and the remaining Task Force members reached consensus that all projects except for MRN110026, SM-110048, and SM-110051 (which will be revisited at a later time) are exempt from regional and project level conformity.

3. **Defining Minor Fleet Expansion (40 CFR 93.126) Discussion:** Sri (MTC) reviewed her memo which shows that there are 7, 186 transit vehicles in the Bay Area with large variations in the quantity of vehicles owned by any one transit operator. Previous conversations with FTA had provided a rough guideline that an expansion of less than 25% would qualify as a minor expansion, however, it is unclear whether the 25% should be applied to the total quantity of transit vehicles in the region or just the fleet of that specific operator or to the total fleet of a certain type of vehicle, etc. Sri argued that all rail cars, cable cars, trolley cars, and other zero emission or electrified vehicles should be exempted from regional and project level conformity since there are no emissions from these vehicles.

   Ted (FTA) had no problem with this approach.

   Sri (MTC) requested that for all other types of vehicles a 40% threshold or $10 million (whichever is more restrictive) be used on an individual operator basis to define the maximum for a minor fleet expansion. This would be consistent with the threshold set for TIP amendments. Ted (FTA) agreed with this approach to minimize the number of standards being used.

   Ginger (EPA) informed the Task Force that EPA is uncomfortable with setting any threshold for minor fleet expansions. OTAC would prefer to deal with all projects on a case by case basis to determine if the project is a minor fleet expansion. She questioned what problem the task force is trying to solve by defining a minor fleet expansion?

   Ashley (MTC) clarified that this would be useful since we have an exemption code that allows for exempting minor fleet expansions and without a definition of what that is the exemption code can never be used. For the TIP amendment she clarified that being able to exempt a minor expansion changes what type of TIP amendment has to be done. If the exemption can be applied then the amendment process is much shorter for some sponsors.

   Mike (Caltrans) raised the concern that if all electrified/zero-emissions vehicles are exempt then it no longer fits the exemption code as a “minor fleet expansion”.

APPENDIX J NOTICE OF PREPARATION

SCH NO. _____

NOTICE OF PREPARATION

To: _____
(leave blank—will be filled in with Responsible/Trustee Agency)

From: California Dept. of Transportation
111 Grand Ave, Oakland, CA 94612
(address)

Subject: **Notice of Preparation of a Draft Environmental Impact Report**
Reference: California Code of Regulations, Title 14, (CEQA Guidelines) Sections 15082(a), 15103, 15375.

Project Title: Soscol Flyover Improvement Project

Project Location: State Route 29/221, Napa County

Project Description: The project proposes to construct a flyover from southbound SR 221 to southbound SR 29. Probably environmental effects include: aesthetics, archaeological resources, biological resources, and water quality.

This is to inform you that the California Department of Transportation will be the lead agency and will prepare an environmental impact report for the project described below. Your participation as a responsible agency is requested in the preparation and review of this document.

We need to know the views of your agency as to the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project.

A more detailed project description, location map, and the potential environmental effects are contained in the attached materials.

A copy of the Initial Study (___is) (X is not) attached.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please direct your response to Melanie Brent, Office Chief Telephone (510) 286-5231 at the address shown above. Please supply us with the name for a contact person in your agency.

Date 7/29/09

Signature Melanie Brent
Title Office Chief

APPENDIX K EVALUATION OF 4(f) RESOURCES

Resources Evaluated Relative to the Requirements of Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the Secretary [of Transportation] may approve a transportation program or project . . . requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- there is no prudent and feasible alternative to using that land; and
- the program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

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

Project Description

The project work at this location would include constructing a flyover from south-bound (SB) state-route (SR) 221 to SB SR 29 and a permanent closure of the existing signal at the Soscol Ferry Road intersection. All work will take place within Caltrans right-of-way. A no build alternative was also considered (see Chapter 1 for detailed project description).

Historic Resources

Surveys of historic architectural resources in the project study area were conducted in June 2005 and are summarized in a Historic Property Survey Report (February 2006). One 4(f) property, the Soscol House which is listed on the National Register of Historic Places (NRHP), was found within the Area of Potential Effects (APE) for the Soscol Junction project. A Finding of Effect

Report was prepared in 2006 which analyzed the potential effects of the proposed project on historic properties within the APE.

The Soscol House- The Soscol House, known today as the Villa Romano Restaurant, is located at 1011 Soscol Ferry Road, on the southwest side (perpendicular) of SR 221, parallel to SR 29. It is a vernacular style two-story L-shaped wood frame building with minimal elements of Greek revival style, which was built as a roadhouse in c. 1856, a substantial rear wing was added in 1875. In 1977 the land on which the Soscol House originally stood was purchased by the State of California for the site of a new highway interchange project. That same year a private party purchased the building and, in 1979, the house was moved approximately 500 feet west of its original location. At this time, the new owners nominated the Soscol House as a historic property and it was listed on the NRHP on February 28, 1979. The 2006 Finding of Effect Report determined there would be no adverse effect to the Soscol House.

Project Impacts

The proposed project does not require a permanent use, physical occupancy or temporary occupancy of the Soscol House.

The proposed project will not cause a constructive use of the Soscol House because the proximity impacts will not substantially impair the protected activities, features, or attributes of the historic property. Constructive use would be an indirect impact to a property of such magnitude as to effectively act as permanent incorporation. The Soscol House is oriented away from the project area, and the proposed project will not introduce a new visual element that is significant enough to diminish the integrity of the property's historic features, particularly in light of the fact that the existing setting surrounding the parcel is already dominated by the freeway. Furthermore, as a moved property, the house already lost integrity of location, and the setting, feeling, and association of the building have been previously compromised as a result of the loss of original fabric and substantial tourist and wine industry growth which have taken place in the local area. Further, no tree removal that would visually impact the property is anticipated.

Although the proposed project may introduce some new audible elements due to pile driving and various construction activities, any increase in traffic noise is expected to be well below the federal noise abatement criteria of 67 dBA (see chapter 2.2.7 for noise studies), and any construction noise would be temporary in nature. Such minimal noise increase would not affect the continued use of Soscol House, nor diminish the integrity of the significant historic features of the property.

Additionally the proposed project will not affect the property as a result of vibration generated during construction. The closest piles that would be driven for

the proposed project will be approximately 500 feet away from Soscol House At this distance any vibrations will have abated far below the levels that could produce damage to the structure.

The Caltrans Office of Cultural Resource Studies requested consultation with the State Office of Historic Preservation under Section 106 of the National Historic Preservation Act (NHPA) on March 6, 2006 regarding the conclusion that the proposed project would have no adverse effects to the Soscol House. In a letter dated June 8, 2006, the State Historic Preservation Officer (SHPO) concurred that the proposed project would result in no adverse effect to the Soscol House under Section 106 of the NHPA.

As there will be no physical or temporary occupancy or constructive use of the Soscol House, the provisions of Section 4(f) are not triggered.