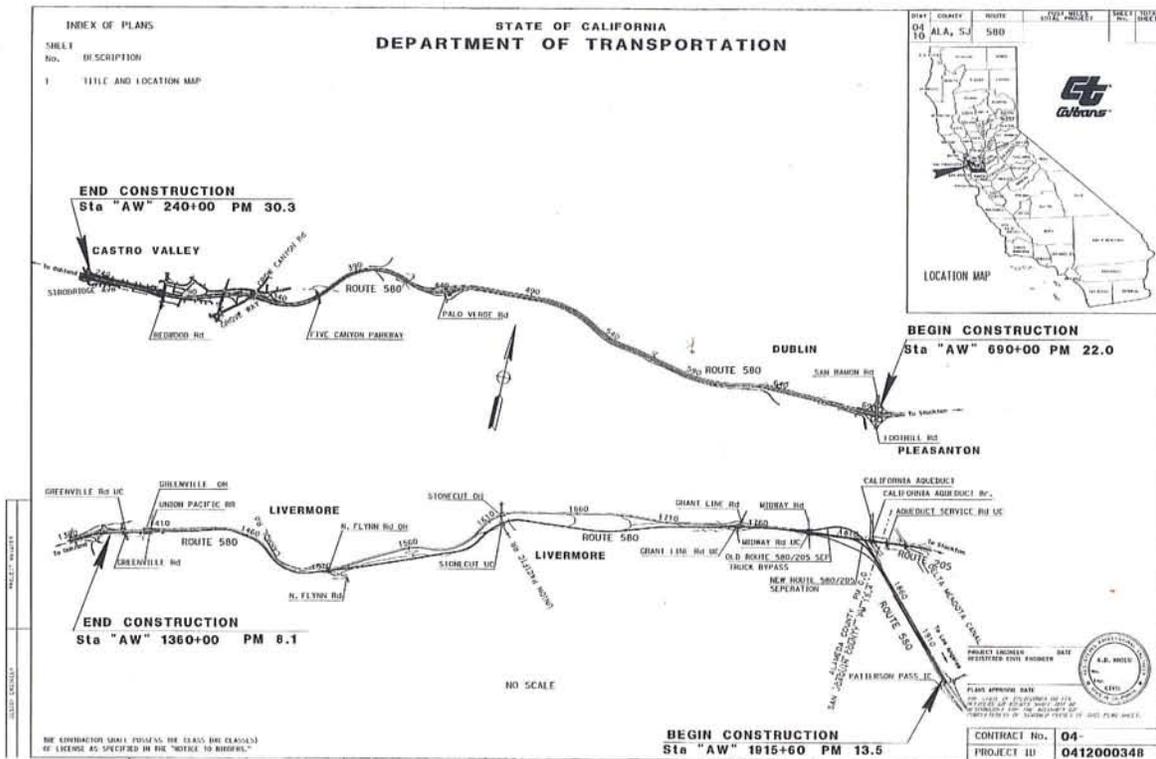


Freeway Performance Initiative Interstate 580 in Alameda and San Joaquin Counties

Alameda and San Joaquin Counties, California
District 4 -ALA 580 (PM 0.0/8.1, 22.0/30.3)
District 10 -SJ-580 (PM 13.5/15.4)
EA 4G190/Project ID 0412000348

Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California Department of Transportation



November 2013

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION

04-ALA 580
10-SJ-580

(PM 0.0/8.1, 22.0/30.3)
(PM 13.5/15.4)

4G190

Dist.-Co.-Rte.	P.M/P.M.	E.A.
Project Title:	Freeway Performance Initiative Interstate 580 in Alameda and San Joaquin Counties	
Lead agency name and address:	Department of Transportation (Caltrans) 111 Grand Avenue Oakland, CA 94612	
Project Location:	Interstate 580	
General plan description:	Transportation	
Zoning:	Transportation	
Other public agencies whose approval is required (e.g. permits, financial approval, or participation agreements):	US Fish and Wildlife Service, California Department of Fish and Wildlife	

Additional copies of this document, as well as the technical studies we relied on in preparing it, are available for review at the District office, 111 Grand Ave., Oakland, CA 94612.

We welcome your comments. While you may voice support or opposition for a project, the most beneficial comments include the following:

- Specific alternatives or mitigation measures that would provide better ways to avoid or mitigate any potential environmental effects of the project
- Concerns that are not addressed in the environmental document
- Inaccuracies or missing information
- Statistical data or facts to support your concern

Please send your written comments to Caltrans by the deadline. Submit email comments to Caltrans at sheryl.m.garcia@dot.ca.gov or send postal mail to Caltrans District 4, Attn: Sheryl M. Garcia, PO Box 23660, MS 8B, Oakland, CA 94623-0660. Hard copies or compact disks of the document are available by writing to the above mailing address; electronic copies are online at <http://www.dot.ca.gov/dist4/envdocs.htm>. **Be sure to submit comments by the deadline: 1/31/2014.**


Stefan Galvez-Abadia
Office Chief
Caltrans District 4 Office of Environmental Analysis

11/26/13
Date

To obtain a copy in Braille, in large print, on computer disk, or on audiocassette, please contact: Caltrans, Attn: Sheryl M. Garcia at the address above, call at 510-286-5594, or use the California Relay Service TTY number, 711.

THIS PAGE INTENTIONALLY LEFT BLANK

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

This project proposes the installation and implementation of a ramp metering system and traffic operations system (TOS) along Interstate 580 (I-580), in Alameda and San Joaquin Counties. The project limits are from the Patterson Pass Interchange in unincorporated San Joaquin County (PM 13.5) to Greenville Road in the City of Livermore, Alameda County (PM 8.1) and from San Ramon Road in the City of Dublin, Alameda County (PM 22.0) to Strobridge Avenue in Castro Valley, an unincorporated area in Alameda County (PM 30.3). The project includes metering twelve existing on-ramps, two of which will be widened to provide for a High Occupancy Vehicle (HOV) preferential lane or Mixed Flow (MF) lane. A total of 59 TOS elements [36 Traffic Monitoring Stations (TMS), 21 Closed Circuit Television Cameras (CCTV), and 2 Changeable Message Signs (CMS)] will be installed.

Determination

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

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

The proposed project would have no effect on Aesthetics, Air Quality, Agriculture or Forest Resources, Hazards and Hazardous Waste Materials, Mineral Resources, Land Use, Noise Population and Housing, Public Services, Recreation, Transportation/Traffic, or Utilities and Service Systems.

In addition, the proposed project would have a less than significant effect on Cultural Resources, Paleontology, Geology and Soils, and Hydrology and Water Quality.

The proposed project would have no significant adverse effects on biological resources because the following mitigation measures would reduce potential effects to insignificance:

- Water quality protection measures will be implemented to protect all waters of the US from indirect effects
- Pre-construction surveys of biological resources will be completed
- Species monitoring will be conducted during construction
- Construction windows will be implemented
- General avoidance, minimization, and/or mitigation measures will be implemented

Melanie Brent
Deputy District Director
District 4
California Department of Transportation

Date

THIS PAGE INTENTIONALLY LEFT BLANK

4

Table of Contents

INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATIONiii

Proposed Mitigated Negative Declaration v

Chapter 1 – PROPOSED PROJECT 1

Project Elements 1

Surrounding Land Uses..... 7

Purpose and Need..... 7

Permits and Agreements Needed 8

Environmental Factors Potentially Affected: 8

Determination: 8

Chapter 2 - CEQA Environmental Checklist 9

I. AESTHETICS: 9

II. AGRICULTURE AND FOREST RESOURCES: 10

III. AIR QUALITY: 12

IV. BIOLOGICAL RESOURCES: 19

V-1. CULTURAL RESOURCES: 45

V-2. PALEONTOLOGY: 46

VI. GEOLOGY AND SOILS: 47

VII. GREENHOUSE GAS EMISSIONS: 48

VIII. HAZARDS AND HAZARDOUS MATERIALS: 48

IX. HYDROLOGY AND WATER QUALITY: 49

IX-1. HYDROLOGY: 50

IX-2. WATER QUALITY 51

X. LAND USE AND PLANNING: 53

XI. MINERAL RESOURCES: 54

XII. NOISE: 54

XIII. POPULATION AND HOUSING: 57

XIV. PUBLIC SERVICES: 58

XV. RECREATION:..... 58

XVI. TRANSPORTATION/TRAFFIC: 58

XVII. UTILITIES AND SERVICE SYSTEMS: 59

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE..... 60

Chapter 3 – Climate Change 61

Appendices..... 71

Chapter 1 – PROPOSED PROJECT

This project proposes the installation and implementation of a ramp metering system and traffic operations system (TOS) along Interstate 580 (I-580), in Alameda and San Joaquin Counties. The project limits are from the Patterson Pass Interchange in unincorporated San Joaquin County (Post Mile (PM) 13.5) to Greenville Road in the City of Livermore, Alameda County (PM 8.1) and from San Ramon Road in the City of Dublin, Alameda County (PM 22.0) to Strobridge Avenue in Castro Valley, an unincorporated area in Alameda County (PM 30.3). The project includes metering twelve existing on-ramps, two of which will be widened to provide for a High Occupancy Vehicle (HOV) preferential lane or Mixed Flow (MF) lane. A total of 59 TOS elements [36 Traffic Monitoring Stations (TMS), 21 Closed Circuit Television Cameras (CCTV), and 2 Changeable Message Signs (CMS)] will be installed (See Figure 1).

All design installation features proposed in this project are standardized as per Caltrans Highway Design Manual and the 2000 Ramp Meter Design Guidelines (RMDG).

Project Elements

Ramp Metering and Widening

I-580/I-205 Connector (New) PM 0.6

I-580 westbound (WB) new connector on-ramp: Project proposes to install new ramp metering equipment.

I-580/I-205 Connector (Old) PM 1.0

I-580 WB old connector on-ramp: Project proposes to install new ramp metering equipment. In addition, the two existing mixed-flow lanes will be converted to one HOV lane and one mixed-flow lane.

Grant Line Road PM 1.4

Grant Line Road eastbound (EB) on-ramp: Project proposes to install new ramp metering equipment.

Grant Line Road PM 1.4

Grant Line Road WB on-ramp: Project proposes to install new ramp metering equipment. In addition, the on-ramp will be widened by cutting the hill to provide one HOV lane and one mixed-flow lane.

North Flynn Road PM 5.8

North Flynn Road EB on-ramp: Project proposes to install new ramp metering equipment.

North Flynn Road PM 6.1

North Flynn Road WB on-ramp: Project proposes to install new ramp metering equipment.

Northbound (NB) Crow Canyon Road/Grove Way PM 28.27

NB Crow Canyon Road/Grove Way EB on-ramp: Project proposes to install new ramp metering equipment. In addition, the project will grind and overlay the existing one-lane on-ramp.

Southbound (SB) Crow Canyon Road/Grove Way PM 28.55

SB Crow Canyon Road/Grove Way EB on-ramp: Project proposes to install new ramp metering equipment. In addition, the project will grind and overlay the existing one-lane on-ramp.

Eden Canyon Road (EB) PM 26.27

Eden Canyon Road EB on-ramp: Project proposes to install new ramp metering equipment. In addition, the project will grind and overlay the existing one-lane on-ramp.

Eden Canyon Road (WB) PM 26.27

Eden Canyon Road WB on-ramp: Project proposes to install new ramp metering equipment. In addition, the project will grind and overlay the existing one-lane on-ramp.

East Castro Valley Boulevard PM 28.27

East Castro Valley Boulevard WB on-ramp: Project proposes to install new ramp metering equipment. In addition, the project will have a sliver widening, grind and overlay the existing two-lane on-ramp.

Strobridge Avenue PM 30.16

Strobridge Avenue EB on-ramp: Project proposes to install new ramp metering equipment. In addition, the project will grind and overlay the existing one-lane on-ramp. In order to build a MVP at this location, the existing retaining wall will be extended approximately 100 ft.

TOS Elements

New TOS elements will be installed as part of this project to fill in gaps in existing TOS coverage on I-580 in Alameda and San Joaquin Counties. These elements include 21 closed circuit television (CCTV) cameras, two changeable message signs (CMS), and 36 one-directional traffic monitoring stations (TMS).

The proposed design features and approximate post miles for all of the on-ramps are listed in the table below (Table 1).

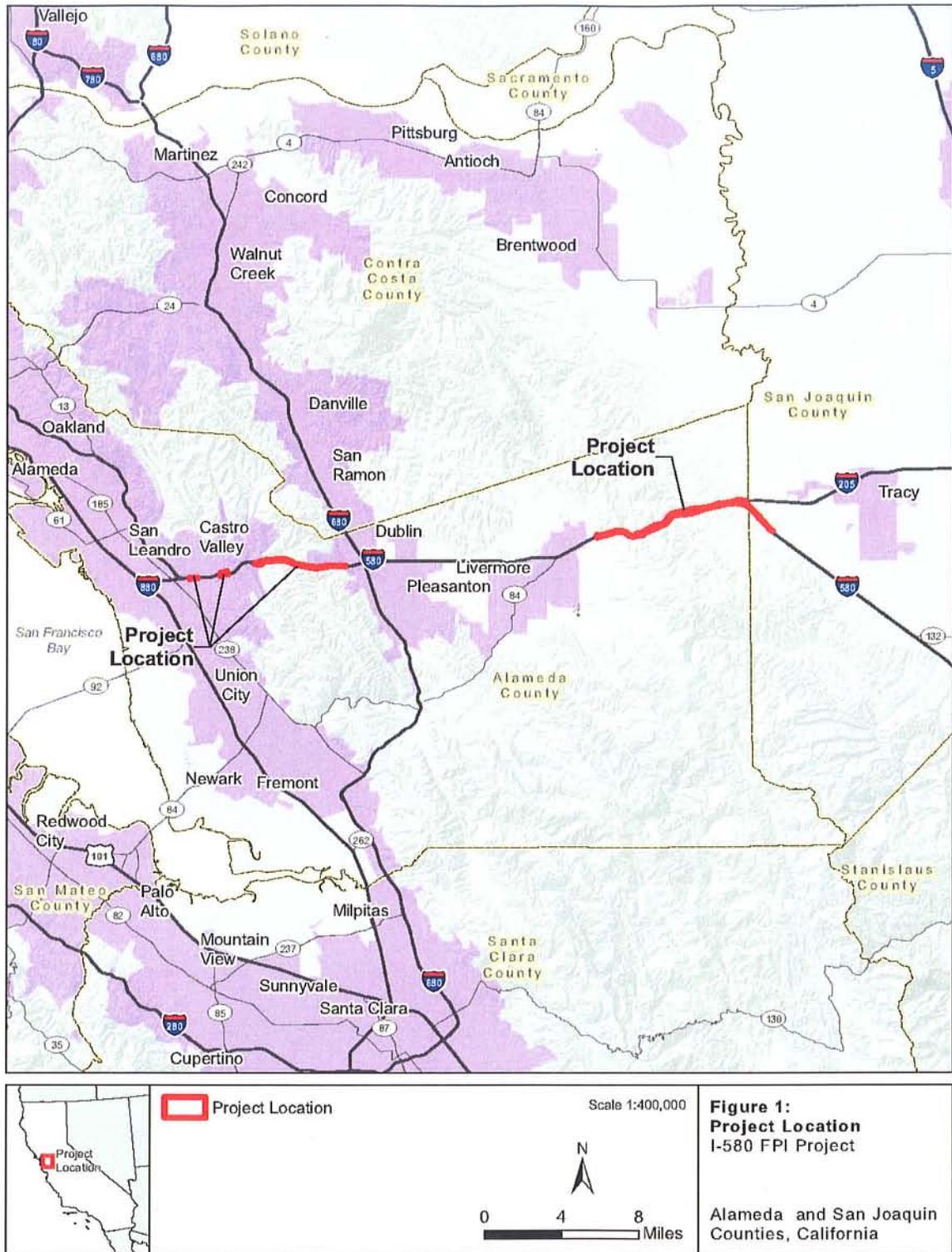


Table 1: Locations of TOS Elements

County	Route	Approximate PM	Direction	Type of TOS Element
ALA	580	26.44	EB	TMS
ALA	580	26.24	EB	CCTV
ALA	580	26.02	WB	TMS
ALA	580	25.45	WB	CCTV
ALA	580	25.05	WB	TMS
ALA	580	24.75	EB	TMS
ALA	580	24.73	WB	CCTV
ALA	580	24.25	WB	TMS
ALA	580	23.92	EB	CCTV
ALA	580	23.84	EB	TMS
ALA	580	23.45	WB	TMS
ALA	580	23.09	EB	CCTV
ALA	580	22.90	EB	TMS
ALA	580	22.50	WB	TMS
ALA	580	22.09	WB	CCTV
ALA	580	8.06	EB	TMS
ALA	580	7.34	WB	CCTV
ALA	580	5.94	EB	TMS
ALA	580	5.88	WB	TMS
ALA	580	5.87	EB	CCTV
ALA	580	5.50	WB	TMS
ALA	580	5.22	WB	CCTV
ALA	580	5.16	EB	CCTV
ALA	580	5.00	EB	TMS
ALA	580	5.00	WB	TMS
ALA	580	4.54	WB	CCTV
ALA	580	4.50	EB	TMS
ALA	580	4.50	WB	TMS
ALA	580	4.43	EB	CCTV
ALA	580	4.05	EB	TMS
ALA	580	4.00	WB	TMS
ALA	580	3.50	EB	TMS
ALA	580	3.50	WB	TMS
ALA	580	3.39	EB	CCTV
ALA	580	3.37	WB	CCTV
ALA	580	3.00	EB	TMS
ALA	580	3.00	WB	TMS
ALA	580	2.50	EB	TMS
ALA	580	2.50	WB	TMS
ALA	580	2.45	WB	CCTV
ALA	580	2.41	EB	CCTV
ALA	580	2.00	EB	TMS
ALA	580	2.00	WB	TMS
ALA	580	1.81	EB	CCTV
ALA	580	1.77	EB	CMS

County	Route	Approximate PM	Direction	Type of TOS Element
ALA	580	1.52	EB	TMS
ALA	580	1.40	WB	CCTV
ALA	580	1.25	WB	TMS
ALA	580	0.96	EB	TMS
ALA	580	0.96	WB	TMS
ALA	580	0.76	WB	CCTV
ALA	580	0.60	EB	TMS
ALA	580	0.60	WB	TMS
ALA	580	0.40	WB	CCTV
ALA	580	0.28	EB	CCTV
ALA	580	0.10	EB	TMS
ALA	580	0.10	WB	TMS
SJ	580	15.1	WB	Roadway Sign (2)
SJ	580	14.9	WB	Roadway Sign
SJ	580	14.3	WB	TMS
SJ	580	14.3	WB	EMS
SJ	580	0.5	WB	Roadway Sign (2)
SJ	580	0.4	WB	Roadway Sign (2)
SJ	580	0.3	WB	Roadway Sign
SJ	580	0.2	WB	EMS (2)
SJ	580	15.4	WB	CMS

Local power will be provided by Pacific Gas & Electric Company (PG&E). Telephone services will be provided by leased telephone lines. General Packet Radio Services (GPRS) wireless modems will provide communication links between the proposed TMS and the Transportation Management Center.

Conduit, cabinets and the other elements comprise the general TOS installation. The conduit relays power, communication, and control wiring between the element, cabinets, and service points.

The CCTVs, CMSs, and cabinets for TMSs will be sited off the shoulder within Caltrans's right-of-way. These will be installed within the clear recovery zone (CRZ), which is within 30 feet (ft) from the edge of the traveled way. They will be protected with Metal Beam Guard Rails (MBGRs).

The CCTVs and CMSs will be placed on poles, which will be anchored in a cast-in-drilled-hole (CIDH) pile foundation located at an approximate depth of 7 ft and 18 ft, having a diameter of 2 ft and 4 ft respectively. The actual depth of a CMS is dependent on soil conditions and is determined during project design. Electrical conduits will be enclosed in trenches 1 to 2 ft wide with a minimum depth of 30 inches.

In addition, eight roadside signs, three EMS, and one overhead sign will be installed between PM 13.5 and 15.4 in San Joaquin County to warn traffic of ramp metering ahead.

Maintenance Vehicle Pullouts (MVPs)

Maintenance vehicle pullouts (MVPs) will be built as part of the project. The MVPs will be approximately 85' long and 12' wide. The proposed locations of the MVPs are listed in the table below (Table 2).

Table 2: Proposed Locations of MVPs

County	Route	Approximate PM	Direction
ALA	580	28.55	EB SB Crow Canyon Road/Grove Way On Ramp
ALA	580	28.27	NB Crow Canyon Road/Grove Way On-Ramp
ALA	580	26.47	WB Eden Canyon Road On-Ramp
ALA	580	26.24	EB
ALA	580	26.07	EB Eden Canyon Road On-Ramp
ALA	580	25.45	WB
ALA	580	24.73	WB
ALA	580	23.92	EB
ALA	580	23.09	EB
ALA	580	22.09	EB
ALA	580	7.34	WB
ALA	580	6.1	WB North Flynn Road On-Ramp
ALA	580	5.87	EB
ALA	580	5.22	WB
ALA	580	4.54	WB
ALA	580	4.43	EB
ALA	580	3.39	EB
ALA	580	3.37	WB
ALA	580	2.45	WB
ALA	580	2.41	EB
ALA	580	1.81	EB
ALA	580	1.77	EB
ALA	580	1.4	WB
ALA	580	1.4	WB Grant Line Road On-Ramp
ALA	580	1.25	EB Grant Line Road On-Ramp
ALA	580	0.76	WB
ALA	580	0.4	WB
ALA	580	0.28	EB
SJ	580	15.4	WB

Surrounding Land Uses

I-580 runs east-west through the study area and serves both local and regional traffic in the area. The I-580 corridor is surrounded by a diverse mix of land uses as it traverses the cities of Castro Valley, Dublin, Pleasanton, and Livermore. The project area is surrounded by residential, commercial, office, public facility and open space uses.

Purpose and Need

The Bay Area is the second-most congested region in the nation with regards to vehicular traffic. Opportunities to relieve traffic congestion to any meaningful degree are limited, owing to a number of key factors. Bay Area freeways are basically a mature system, with capacity increases possible at only a limited number of locations. Finances in today's economy are constrained, and adequate funding for large transportation projects is often not available due to competing needs and rising construction costs. There is a need to maximize system performance through innovative, cost effective strategies, and thereby reduce the need for new, large-scale capital investments. Ramp metering is needed to improve freeway efficiency.

Need

I-580 experiences heavy congestion during peak periods. Some of the congestion and breakdown in traffic flow on I-580 are caused by platoons of vehicles entering the mainline traffic. The unmeted traffic from on-ramps contributes to the congested conditions of I-580. Metering the on-ramps would help alleviate the congestion on the mainline.

Installation and implementation of a ramp metering system on a freeway is an effective operation tool for the overall efficiency of a transportation corridor. In addition, Changeable Message Signs (CMS) are used to advise motorists of adverse traffic or road conditions and provide traveler information. CCTV cameras are used to identify the nature of an incident once it has been detected. When used along with traffic monitoring stations, which reduce the time to detect an incident, CCTV cameras reduce the time of verification. Transportation Management Center (TMC) personnel, upon verifying that an actual incident has occurred, are able to determine the basic type of response needed. When identifying an incident or congested condition, the TOS advises motorists to enable them to make decisions on how to minimize their trip time. The TOS provides information about incidents and traffic problems to motorists by means of CMS.

Therefore, the expansion of the ramp meter program on the proposed locations on I-580 is needed as per Caltrans' Ramp Metering Development Plan, 2011 (RMDP, 2011).

Purpose

I-580 is a major freeway connecting interregional traffic from Oakland to Vernalis. Caltrans has committed to implementing state of the art traffic operation systems on California's congested freeways, including ramp metering. The purpose of this project is to improve traffic operations by completing the installation and implementation of a ramp metering system, CCTV, TMS and CMS on I-580 in Alameda and San Joaquin Counties. The goal of this project is to improve traffic mobility and safety by mitigating associated traffic conflicts due to weaving and merging maneuvers.

Permits and Agreements Needed:

Permit	Agency	Acquired
Incidental Take Permit (ITP)	California Department of Fish and Wildlife (CDFW)	Will be acquired during the design phase of the project.
Biological Opinion (BO)	US Fish and Wildlife Service (USFWS)	In consultation. Will be acquired prior to final MND/Initial Study.

Environmental Factors Potentially Affected:

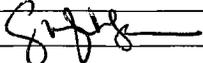
The environmental factors checked below would be potentially affected by this project. Please see the checklist below for additional information:

<input type="checkbox"/>	Aesthetics	<input type="checkbox"/>	Agriculture and Forestry	<input type="checkbox"/>	Air Quality
<input checked="" type="checkbox"/>	Biological Resources	<input checked="" type="checkbox"/>	Cultural Resources	<input type="checkbox"/>	Geology/Soils
<input type="checkbox"/>	Greenhouse Gas Emissions	<input type="checkbox"/>	Hazards and Hazardous Materials	<input type="checkbox"/>	Hydrology/Water Quality
<input type="checkbox"/>	Land Use/Planning	<input type="checkbox"/>	Mineral Resources	<input type="checkbox"/>	Noise
<input type="checkbox"/>	Population/Housing	<input type="checkbox"/>	Public Services	<input type="checkbox"/>	Recreation
<input type="checkbox"/>	Transportation/Traffic	<input type="checkbox"/>	Utilities/Service Systems	<input type="checkbox"/>	Mandatory Findings of Significance

Determination:

On the basis of this initial evaluation:

<input type="checkbox"/>	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
<input checked="" type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
<input type="checkbox"/>	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
<input type="checkbox"/>	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
<input type="checkbox"/>	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required

Signature: 	Date: 11/26/2013
Printed Name: Sheryl M. Garcia	

Chapter 2 - CEQA Environmental Checklist

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.

I. AESTHETICS: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

I-580 is listed as an eligible State Scenic Highway. The portion of I-580 south of the I-580/I-205 split is classified as an Officially Designated State Scenic Highway. Development of a Scenic Highway must incorporate “not only safety, utility and economy, but also beauty” and scenic appearance must be a consideration during the planning, design, and construction processes.

Environmental Consequences

The project is anticipated to result in minimal impacts to existing vegetation and outward views from the freeway. The visual quality would remain similar to existing conditions and thus will not alter its eligibility as a State Scenic Highway.

Avoidance, Minimization, and/or Mitigation Measures

The following measures to avoid or minimize visual impacts would be incorporated into the project:

- Landscaping and irrigation systems that are damaged or removed would be replaced or repaired.
- All disturbed ground surfaces would be restored.
- An appropriate aesthetic treatment would be applied to the face of new retaining walls that are exposed to public view. The treatment will be determined by the District 4 Office of Landscape Architecture.
- When practical and in areas where highway landscaping already exists, landscape planting would be installed to screen new equipment cabinets while providing clear access for maintenance and service of the cabinet. Landscape materials and placement would be determined by the Office of Landscape Architecture.
- New equipment cabinets would be painted green (Caltrans standard color).
- When possible, new CMS will be located so as to minimize interference with views of scenic features. The signs would be combined with existing structures (co-mounted) when feasible.
- CMS gantries would be painted green (Caltrans standard color).

Under these circumstances, Scenic Resources would not be adversely affected by the project, the appearance of the highway corridor would not be changed in a substantial manner, and the project would not have an adverse visual impact on neighbors of the project area or on users of the highway. Negative visual impacts would be avoided.

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:

Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
--------------------------------	---------------------------------------	------------------------------	-----------

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) 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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project will not affect any agricultural lands or forest resources therefore no avoidance, minimization, and/or mitigation measures are needed.

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:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

An *Air Quality Report* (April 2013) was prepared for the proposed project. The technical report assessed the effects of the proposed project on air quality.

Air quality of a region is determined by the climatological conditions, topography, and the types and amounts of emitted pollutants. An air basin generally has similar meteorological and geographic conditions throughout. California is divided geographically into 15 air basins. The proposed project is located within the San Francisco Bay Area Air Basin, which is characterized by complex terrain consisting of coastal mountain ranges, inland valleys and bays. The region has a large population and automobiles are sources of CO, particulate matter, and photochemical air pollution.

The US EPA defines sensitive receptors as including, but not limited to, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities. These are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants (<http://www.epa.gov/region1/eco/uep/sensitivereceptors.html>). Sensitive receptors are locations where people susceptible to the effects of air pollutants may stay for an extended period of time, which include land uses or facilitates such as residences, schools, playgrounds, childcare centers and hospitals. There are residential developments and parks within close vicinity of the project.

The Bay Area Air Quality Management District (BAAQMD) maintained monitoring stations collect ambient air quality data around the Bay Area on a continuous basis. Data of recent years collected at three of the closest monitoring stations can be used to characterize the existing conditions near the proposed project. They are listed in the following table (Table 3).

Table 3: Ambient Air Quality Data

Pollu- tants	Category	Monitoring Stations								
		Livermore- 793 Rincon Avenue			Oakland- 9925 International Blvd			Hayward- La Mesa		
		2009	2010	2011	2009	2010	2011	2009	2010	2011
Ozone	Nat. 8-hr Max. (ppm)	<u>0.086</u>	<u>0.097</u>	<u>0.084</u>	0.062	0.058	0.051	<u>0.08</u>	-	0.07
	State 8-hr Max. (ppm)	<u>0.086</u>	<u>0.097</u>	<u>0.084</u>	0.063	0.058	0.052	<u>0.081</u>	-	0.07
	State 1-hr Max. (ppm)	<u>0.112</u>	<u>0.099</u>	<u>120</u>	0.092	<u>0.097</u>	0.091	<u>0.107</u>	-	0.088
CO	Nat. 8-hr Avg. (ppm)	1.31	-	-	1.99	1.63	1.5	-	-	-
	State 8-hr Avg. (ppm)	1.31	-	-	1.99	1.63	1.5	-	-	-
PM ₁₀	Nat. 24-hr Max. (ig/m3)	-	-	-	-	-	-	-	-	-
	State 24-hr Max. (ig/m3)	-	-	-	-	-	-	-	-	-
	State Annual Avg. (ig/m3)	-	-	-	-	-	-	-	-	-
PM _{2.5}	Nat. 24-hr Max. (ig/m3)	<u>45.7</u>	34.7	<u>45.4</u>	<u>36.3</u>	25.2	<u>49.3</u>	-	-	-
	Nat. Annual Avg. (ig/m3)	9.1	7.6	7.8	9.2	7.7	10.1	-	-	-
	State Annual Avg. (ig/m3)	9.2	7.6	-	-	-	-	-	-	-
NO ₂	Nat./State 1-hr Max (ppm)	0.052	0.058	0.05 7	0.062	0.064	0.057	-	-	-
	Nat./State Annual Avg. (ppm)	0.012	0.011	0.01 1	0.014	0.013	0.013	-	-	-

Note: Underlined figures "xxx" denote exceedances of either the NAAQS or the CAAQS.

The table below (Table 4) lists the attainment statuses of the BAAQMD for air pollutant under the state standards.

Table 4: California Ambient Air Quality Standards & Attainment Statuses

Pollutant	Averaging Time	California Standards	
		Concentration	Attainment Status
Ozone	8 Hour	0.070 ppm (137 µg/m ³)	N
	1 Hour	0.09 ppm (180 µg/m ³)	N
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m ³)	A
	1 Hour	20 ppm (23 mg/m ³)	A
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	n/a
	1 Hour	0.18 ppm (339 µg/m ³)	A
Sulfur Dioxide	24 Hour	0.04 ppm (105 µg/m ³)	A
	1 Hour	0.25 ppm (655 µg/m ³)	A
Particulate Matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³	N
	24 Hour	50 µg/m ³	N
Particulate Matter - Fine (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³	N
	24 Hour	-	-
Sulfates	24 Hour	25 µg/m ³	A
Lead	Calendar Quarter	-	-
	30 Day Average	1.5 µg/m ³	A
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m ³)	U
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m ³)	U
Visibility Reducing particles	8 Hour (1000 to 1800 PST)	-	U
A=Attainment N=Nonattainment U=Unclassified			
mg/m ³ =milligrams per cubic meter			
ppm=parts per million			
µg/m ³ =micrograms per cubic meter			
Source: BAAQMD			

Project Level Analysis**Carbon Monoxide (CO)**

Carbon monoxide (CO) is a colorless, odorless, poisonous gas. CO is emitted directly from traveling vehicles. A product of incomplete burning of hydrocarbon-based fuels, CO consists of a carbon atom and an oxygen atom linked together. It enters the bloodstream through the lungs and forms carboxyhemoglobin, a compound that inhibits the blood's capacity to carry oxygen to organs and tissues. Persons with heart disease are especially sensitive to carbon monoxide poisoning and may experience chest pain if they breathe the gas while exercising. Infants, elderly persons, and individuals

with respiratory diseases are also particularly sensitive. CO can affect healthy individuals, impairing exercise capacity, visual perception, manual dexterity, learning functions, and the ability to perform complex tasks.

The CO analysis for this project adheres to the December 1997 “Transportation Project-Level Carbon Monoxide Protocol” prepared by the Institute of Transportation Studies, University of California at Davis and approved by the US EPA for use in the Bay Area. Since the Bay Area was designated a maintenance area for CO on June 1, 1988, the protocol indicates that an analysis by comparison is appropriate for this project. This involves a comparison of the proposed project with an existing facility within the air district that has the potential of creating higher CO concentrations at the time of attainment demonstration. In this study, comparisons are made between the existing Route 101 at Tully Road in San Jose and the proposed project on Route 580 at the Grant Line Road Interchange, where ramp widening is proposed (See Table 5).

Table 5: Comparison of Mainline Conditions

	Parameters	Route 580 – Build at Grant Line Rd.	Route 101 – Existing at Tully Rd. San Jose
A	Receptor Distance	750 ft	20 ft
B	Roadway Geometry	9 lanes	8 lanes + 2 auxiliary lanes
C	Worst case Meteorology	Coastal Valley	Coastal Valley
D	ADT Volumes	166,000 (2016) 224,000 (2035)	256,000 (2011)
E	Hot/Cold Starts	10/50 NB 10/50 SB	10/50 NB 10/50 SB
F	Percent Heavy Duty Gasoline (HDG) Trucks	1.10%	2.20%
G	8 Hr. Background CO	1.3 ppm (2009-2011)	2.3 ppm (2009-2011)

Environmental Consequences

Since all conditions in items A through G listed in Table 5 are satisfied, there is no reason to expect higher CO concentrations at the project location than existed at Route 101 at Tully Road in San Jose in Santa Clara County. The project therefore will not cause exceedances of state CO standards.

Avoidance, Minimization, and/or Mitigation Measures

The project will not cause exceedances of state CO standards and therefore no avoidance, minimization, and/or mitigation measures are required.

Particulate Matters (PM₁₀ and PM_{2.5})

Particulate Matters (PM₁₀ and PM_{2.5}) refer to airborne particles that are less than 10 microns in diameter (PM₁₀) 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, PM₁₀, are typically formed by earth-based material that enters the air through a variety of actions including “entrainment” into the atmosphere by windblown 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 of 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.

Environmental Consequences

US EPA lowered the 24-hour PM_{2.5} standard from 65 µg/m³ to 35 µg/m³ in 2006. The Bay Area Air Basin was designated as nonattainment of the 24-hour PM_{2.5} standard on October 8, 2009 by US EPA based upon violations of the new standard over the three-year period from 2007 through 2009. The designation became effective as of December 14, 2009.

The San Francisco Bay Area is an unclassified area for the national PM₁₀ standard and an attainment area for national annual PM_{2.5} standards. The Bay Area is non-attainment for the State PM₁₀ and PM_{2.5} standards.

The final conformity rule issued by US EPA on March 10, 2006 establishes the transportation conformity criteria and procedures for determining which transportation projects must be analyzed for local air quality impacts for PM_{2.5} and PM₁₀. In PM_{2.5} and PM₁₀ nonattainment areas, a quantitative project-level hot-spot analysis is required for project-level conformity determinations for projects of air quality concern (POAQC) as defined in 40 CFR 93.123(b)(1). POAQC are certain highway and transit projects that involve significant levels of diesel vehicle traffic, or any other project that is identified in the PM_{2.5} or PM₁₀ SIP as a localized air quality concern, including:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- Projects affecting intersections that are at Level-of-Service D, E, or F with a significant number of diesel vehicles, or those that will change to Level-of-Service D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{2.5} or PM₁₀ applicable implementation plan or implementation plan submission, a appropriate, as sites of violation or possible violation.

The project is not a new freeway or a highway expansion project. It does not significantly increase the volume or percentage of diesel vehicles. The proposed Ramp Metering and TOS Projects are non-capacity increasing projects. Metering and TOS are intended to maximize the efficiency and improve the management and reliability of the existing freeway infrastructure without widening the freeways.

The project does not affect intersections with Level of Service (LOS) of D, E, or F that have a significant number of diesel vehicles. The truck percentages are low on the ramps. The ramp meters will be in operation only during the AM and/or PM peak periods when diesel truck traffic may be limited due to congested freeways and local arterials.

The project does not create new bus or rail terminals and transfer points, or expand existing ones.

There is currently no implementation plan for PM_{2.5} for this region. The project is not in and does not affect areas that will potentially be identified in the PM_{2.5} implementation plan as sites of violation or possible violation.

The proposed project is not considered a POAQC for the reasons stated above and no hot-spot analysis is required according to the March 2006 Guidance. The project is not expected to cause or contribute to

any new localized PM_{2.5} violations of NAAQS.

One of the requirements according to the March 2006 Guidance is interagency consultation must be conducted to determine project-level conformity. As the transportation planning agency for the San Francisco Bay Area, MTC has established the interagency consultation procedures in Bay Area Interagency Consultation Procedures for PM_{2.5} Hot-Spot Analyses in its Resolution No. 3946. MTC facilitates the consultation process through an Air Quality Community Task Force, which makes the determination as to whether the project is a POAQC or not at their regularly scheduled meetings.

Caltrans submitted the PM_{2.5} assessment form for the implementation of the Freeway Performance Initiative, which the proposed project is a part of, to the Task Force on February 7, 2012 and participated in the February 23, 2012 Task Force meeting. Task Force members from Caltrans, the FHWA, FTA and US EPA all concurred with the determination that the Freeway Performance Initiative is not a POAQC. Written confirmation of the concurrence was received from MTC on March 27, 2012.

Because the project has been determined not to be a POAQC regarding particulate matter (PM_{2.5}) as defined in 40 CFR 93.123(b)(1), a detailed PM_{2.5} hot-spot analysis was not completed because Clean Air Act and 40 CFR 93.116 requirements are met without an explicit hot-spot analysis.

Avoidance, Minimization, and/or Mitigation Measures

There is currently no implementation plan for PM_{2.5} for this region. The project is not in and does not affect areas that will potentially be identified in the PM_{2.5} implementation plan as sites of violation or possible violation.

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

Ozone

Ozone is an indirect pollutant. Ozone precursors are converted into ozone by photochemical reactions some distance downwind, over several hours.

Environmental Consequences

Since ozone precursors are converted into ozone by photochemical reactions some distance downward, 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.

Avoidance, Minimization, and/or Mitigation Measures

If a project can be shown, through a regional conformity analysis, to contribute to annual emission reductions as part of a regional transportation plan, then its individual impact on ozone should not be an issue. The proposed project was included in the regional emissions analysis conducted by MTC for the Transportation 2035 Plan (ID# 230419) and the 2011 Transportation Improvement Program (ID# REG090003). The project is also included in the 2013 TIP and the Plan Bay Area, which was adopted by MTC on July 18, 2013. Therefore this project’s individual impact on ozone should not be of concern.

No project level avoidance, minimization, and/or mitigation measures are required.

Nitrogen Dioxides

Nitrogen dioxide (NO₂) is one of a group of highly reactive gases known as "nitrogen oxides (NO_x)." Other nitrogen oxides include nitrous acid and nitric acid. While the National Ambient Air Quality Standards (NAAQS) covers this entire group of NO_x, NO₂ is the component of greatest interest and the indicator for the larger group of nitrogen oxides. NO₂ 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, NO₂ is linked with a number of adverse effects on the respiratory system.

On January 22, 2010, US EPA established a new 1-hour NO₂ standard in the NAAQS at the level of 100 parts per billion (ppb). US EPA expects to designate areas as attaining or not attaining the new standard two years after establishing the new NO₂ standard. There is no approved regulatory model for roadway-related NO₂ hot-spot analysis at this time.

Environmental Consequences

There is no approved regulatory model for roadway-related NO₂ hot-spot analysis at this time; therefore project related impacts are unable to be determined.

Avoidance, Minimization, and/or Mitigation Measures

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

Construction Impacts

The proposed project would generate air pollutants during the construction period, which is expected to last a total of 2 1/2 years. Trucks and construction equipment emit hydrocarbons, oxides of nitrogen, carbon monoxide and particulates. Most pollution will consist of wind-blown dust generated by excavation, grading, hauling and various other activities. The impacts from the above activities would vary from day to day as construction progresses. No hot-spot analysis was conducted for the construction emissions of the project.

Recent studies have raised significant concerns about the health risks associated with emissions from diesel construction equipment. For PM₁₀, PM_{2.5} or air toxics, there currently are no microscale requirements that are applicable at the project level for the temporary impacts in the construction phase. To minimize air quality impacts from construction activities, control measures will be implemented as specified in the Environmental Stewardship section of Caltrans Standard Specifications - Section 14-9.01 Air Pollution Control and Section 14-9.02 Dust Control.

IV. BIOLOGICAL RESOURCES:

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

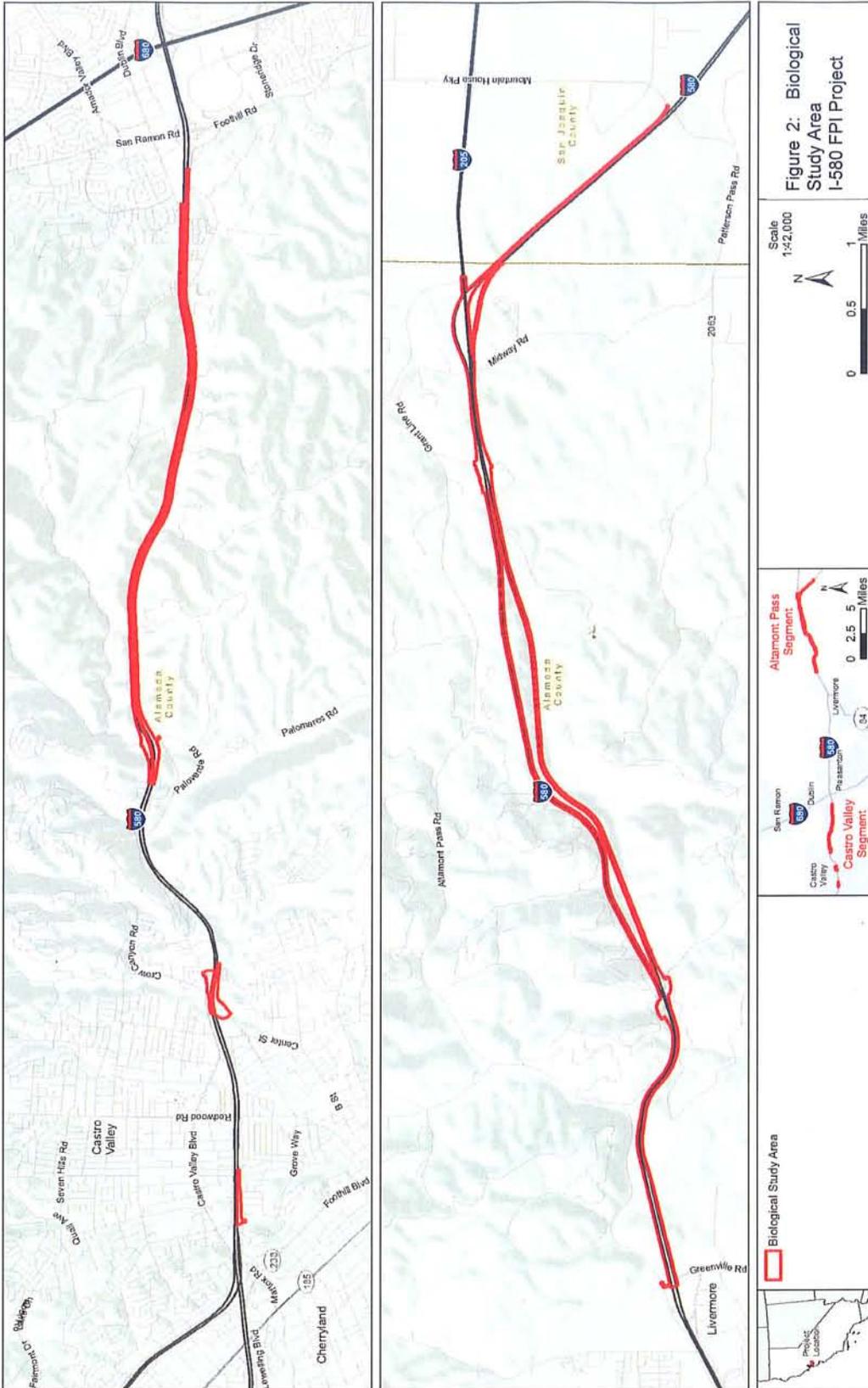
WETLANDS AND OTHER WATERS

Affected Environment

A *Natural Environment Study Interstate 580 Freeway Performance Initiative Project* (NES) (October 2013) was prepared for the project. The NES identified 1.260 acres of potential waters of the US, including wetlands within the Biological Study Area (BSA) (See Figure 2). The BSA includes the area 30 ft from the edge of project impacts within the Caltrans' right of way along I-580 in Alameda County from the San Joaquin County line (P.M. 0.0) to Greenville Road (P.M. 8.3), from Foothill Road (P.M. 21.7) to Strobridge Avenue (P.M. 30.4) and on I-205 from the San Joaquin County Line (P.M. 0.0) to I-580 (P.M. 1.0) for a total length of 18 miles. These features of interest include one wetland type, freshwater marsh, and three water feature types. Wetlands delineated as freshwater marsh in the BSA include one wetland delineated by American bulrush (American Bulrush Marsh Alliance [*Schoenoplectus americanus* Herbaceous Alliance]) and three wetlands dominated by cattail (Cattail Marshes Alliance [*Typha angustifolia, domingensis, latifolia* Herbaceous Alliance]). Wetlands that occur within the BSA total 0.146 acres. No wetlands occur within the construction area. The construction area is the area that will be temporarily or permanently impacted through project activities and is included entirely within the BSA. Five water features, including intermittent streams, perennial streams, and aqueduct (annual), occur within the BSA and total 1.114 acres. No water features occur within the construction area.

Environmental Consequences

Within the BSA, there are 0.146 acres of potentially jurisdictional wetland features. These features are not within the zones of permanent or temporary impacts. Total acreage for other water features within the BSA, including intermittent, perennial waterways and aqueduct, totals 1.114 acres, none of which will be permanently impacted or temporarily impacted.



Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures in the section below will reduce the potential for effects to waters of the U.S., including wetlands, during project construction. Specific water quality protection measures include water quality inspections (Measure #25), proper treatment of concrete waste (Measure #27), and Caltrans best management practices (BMPs) (Measure #24).

ANIMAL SPECIES

Affected Environment

A Natural Environmental Study (NES) (October 2013) was prepared for the project. Based on literature and database searches and familiarity with the region, a total of 77 wildlife species were initially considered to have potential to occur within the BSA. A wildlife habitat assessment was conducted within the BSA in December 2012, and 51 of these species were removed from consideration based on a low probability of occurring in the BSA. The following special-status species have some potential to occur within the BSA and are addressed in more detail in this section:

- California tiger salamander (*Ambystoma californiense*)
- California red-legged frog (*Rana draytonii*)
- Alameda whipsnake (*Masticophis lateralis euryxanthus*)
- Bald eagle (*Haliaeetus leucocephalus*)
- San Joaquin kit fox (*Vulpes macrotis mutica*)
- Longhorn fairy shrimp (*Branchinecta longiantenna*)
- Vernal pool fairy shrimp (*Branchinecta lynchi*)
- Vernal pool tadpole shrimp (*Lepidurus packard*)
- American badger (*Taxidea taxus*)
- Golden eagle (*Aquila chrysaetos*)
- San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)
- Western pond turtle (*Actinemys marmorata*)
- Pallid bat (*Antrozous pallidus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- Hoary bat (*Lasiurus cinereus*)
- Yuma myotis (*Myotis yumanensis*)
- San Joaquin whipsnake (*Masticophis flagellum ruddocki*)
- Western burrowing owl (*Athene cunicularia hypugaea*)
- Cooper's hawk (*Accipiter cooperii*)
- Tricolored blackbird (*Agelaius tricolor*)
- Yellow warbler (*Dendroica petechial brewsteri*)
- White-tailed kite (*Elanus leucurus*)
- California horned lark (*Eremophila alpestris actia*)
- Loggerhead shrike (*Lanius ludovicianus*)
- Black-crowned night heron (*Nycticorax nycticorax*)
- Midvalley fairy shrimp (*Branchinecta mesovallensis*)

California Tiger Salamander

The Central California Distinct Population Segment (DPS) of California tiger salamander was listed as federally threatened on August 4, 2004 (U.S. Fish and Wildlife Service [USFWS] 2004), and by the

California Department of Fish and Wildlife (CDFW) as threatened under the California Endangered Species Act (CESA), on May 20, 2010.

The California tiger salamander's low reproductive rate, in combination with loss of habitat, habitat fragmentation, hybridization with non-native eastern tiger salamander (*Ambystoma tigrinum*), and introduction of predators, has imperiled populations throughout the range.

Affected Environment

Critical habitat was designated for the Central California DPS of California tiger salamander in 2005 (USFWS 2005a). There is no designated critical habitat within the BSA. The nearest critical habitat is East Bay Region Unit 18, located north of the intersection of I-580 and Isabel Avenue, approximately 5.10 miles west-northwest of the BSA (PM 8.3).

None of the aquatic features identified within the BSA are suitable habitat for California tiger salamanders because they are too shallow and/or ephemeral to support breeding. Suitable upland habitat is present in grassland habitat within the BSA.

Environmental Consequences

California tiger salamanders within the construction area may suffer direct harassment, harm, injury, or mortality as a result of construction activities, including initial site preparation, use of heavy equipment for excavation and backfill, handling of stockpiles and stored materials, ramp resurfacing, ramp widening, construction of ramp metering, installation of TOS elements, guard rails, MVPs, and retaining walls for ramp widening, and electrical trenching. The species-specific minimization measures for California tiger salamander, along with the General Avoidance and Minimization Measures detailed in the section below are intended to reduce the likelihood of direct take during project activities.

Avoidance, Minimization and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures listed below will reduce the potential for effects to California tiger salamander during project construction. Species-specific measures include biological monitoring (Measure # 4), a April 15 to October 15 work window for construction in suitable habitat (Measure # 6), preconstruction surveys (Measure # 7), wildlife exclusion fencing (Measure # 14), notification of listed and other special-status species on site (Measure # 15), prevention of wildlife entrapment (Measure # 16), proper materials storage (Measure # 17), and the prohibition of mono-filament netting (Measure # 26).

Caltrans proposes that the temporary impacts of 5.561 acres will be mitigated through on-site restoration at a ratio of 1:1 and 1.171 acres of permanent impacts will be mitigated at a ratio of 3:1 for 3.513 acres as off-site compensation. The mitigation proposal is based on the current estimate of impacts to suitable habitat within the range of the species. Caltrans proposes this compensatory mitigation for California tiger salamander to meet the requirements of California FGC Section 2081 for obtaining an ITP. Caltrans anticipates that the avoidance and minimization measures, in conjunction with the proposed compensatory mitigation, will reduce potential adverse effects to a negligible level. This mitigation may be used to satisfy the conditions of multiple agencies and jurisdictions including the FESA, CESA, and the CEQA process. Caltrans will consult with USFWS and CDFW to establish mitigation requirements. During consultation, off-site mitigation location and its criteria will be determined, should off-site mitigation be necessary. The final mitigation proposal will be subject to modification during the agency consultation and permitting processes.

California Red-Legged Frog

The California red-legged frog was federally listed as a threatened species on May 23, 1996 (USFWS 1996). Revised critical habitat for this species was designated by USFWS on March 17, 2010 (USFWS 2010). It is also a California Species of Special Concern.

Affected Environment

Critical habitat determinations are based upon the presence of physical and biological Primary Constituent Elements (PCE) that is essential to the conservation of the species. PCE for California red-legged frog include aquatic breeding habitat, nonbreeding aquatic habitat, upland habitat, and dispersal habitat (USFWS 2006b).

Aquatic breeding habitat consists of standing bodies of fresh water, including: natural and manmade ponds, slow moving streams or pools within streams, and other ephemeral or permanent water bodies that typically become inundated during winter rains and hold water for a minimum of 20 weeks in all but the driest of years.

Non-breeding aquatic habitat consists of fresh water habitats that may or may not hold water long enough to be suitable for breeding, but that do provide shelter, foraging, predator avoidance, and aquatic dispersal. In addition to aquatic breeding habitat, non-breeding habitat may include plunge pools within intermittent creeks, seeps, quiet water refugia during high water flows, and springs of sufficient flow to withstand the summer dry period.

Upland habitat provides shelter, foraging, and predator avoidance, within 200 feet of the edge of aquatic and riparian habitat, and consists of grasslands, woodlands, or wetland/riparian vegetation. Upland habitat contains features that maintain the hydrologic, geographic, topographic, ecological, and edaphic features that support and surround the wetland or riparian habitat. Upland features contribute to filling and drying of wetland or riparian habitat and maintain suitable periods of inundation in pools for breeding, non-breeding, feeding, and shelter. Upland habitat can include features such as boulders, rocks, downed trees, small mammal burrows, and moist leaf litter.

Dispersal habitat, which allows for movement between occupied sites, consists of accessible upland or riparian habitat within designated critical habitat units located between occupied locations within 0.70 miles of each other. Dispersal habitat includes natural and altered habitats that do not contain barriers. Barriers may include heavily traveled roads constructed without culverts or bridges. Dispersal habitat does not include moderate to high density urban or industrial development, large reservoirs, or areas that do not contain other primary constituent elements.

Critical habitat within the BSA contains few PCE for California red-legged frog. No aquatic breeding habitat or non-breeding aquatic habitat occurs within the critical habitat mapped within the BSA, although there is upland habitat within the critical habitat mapped within the BSA that occurs within 200 feet of the edge of aquatic and riparian habitat. The roadway does not contain any PCEs and acts as a barrier to dispersal.

There are 28 documented occurrences within ponds, streams, or wetlands within 1 mile of the BSA (CDFW 2013), as well as numerous ponds and streams within 1 mile of the BSA visible on aerial imagery that could contain suitable breeding habitat.

Adults and juveniles originating from these ponds and streams may potentially use the habitat in the BSA for upland refuge or dispersal. As such, California red-legged frogs have potential to occur in

grassland, riparian woodland, freshwater marsh, and creek channel habitats in both the Castro Valley and Altamont Pass segments of the BSA.

I-580 represents a major barrier to dispersal of California red-legged frogs. The paved surface of I-580 is not considered to be a viable dispersal corridor for California red-legged frogs because heavy traffic likely causes mortality of almost all individuals attempting to cross.

Due to the presence of known populations and potential breeding ponds within dispersal distance of the BSA and designated critical habitat in the region, Caltrans has inferred presence of California red-legged frog throughout the BSA.

Environmental Consequences

California red-legged frogs within the construction area may suffer direct harassment, harm, injury, or mortality as a result of construction activities, including initial site preparation, use of heavy equipment for excavation and backfill, handling of stockpiles and stored materials, ramp resurfacing, ramp widening, construction of ramp metering, installation of TOS elements, guard rails, MVPs, and retaining walls for ramp widening, and electrical trenching. The species-specific minimization measures for California red-legged frog, along with the general avoidance and minimization measures detailed in the General Avoidance and Minimization Measures section below, are intended to reduce the likelihood of direct take during project activities.

California red-legged frogs may experience direct injury or mortality during earthwork within the construction area. Excavation, fill, and other construction activities will impact a total of 9.330 acres of grassland and riparian woodland habitat in the construction area that provides potential aestivation, foraging, and dispersal habitat for California red-legged frog. Temporary impacts will total 7.686 acres and permanent impacts will total 1.644 acres. The habitat within the construction area is considered to be of marginal quality because of the high levels of roadside disturbance associated with I-580. Caltrans anticipates that construction will push this zone of roadside disturbance further outward into less disturbed habitat, particularly at ramp widening locations, causing degradation of habitat due to edge effects. Caltrans concludes that the proposed modifications to California red-legged frog habitat within the construction area may have a potential adverse impact on the behavioral patterns of some individuals of this species, including foraging, migration, and aestivation. Caltrans does not anticipate any adverse impact to breeding habitat or breeding behavior within the construction area as a result of the proposed project.

Caltrans has requested formal consultation with USFWS for California red-legged frog. Part of the consultation process has been to analyze the potential effects to California red-legged critical habitat. Caltrans' analysis identified that the construction area within critical habitat does not provide the required PCEs and the amount of modified area within the critical habitat unit is less than 1 percent of the total area. Therefore, project related impacts will not result in any measurable decrease in the species' ability to reproduce. Caltrans concludes that the proposed project will not adversely modify California red-legged frog critical habitat.

Avoidance, Minimization and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to California red-legged frog during project construction. Species-specific measures include biological monitoring (Measure # 4), pre-construction surveys (Measure # 7), wildlife exclusion fencing (Measure # 14), notification of listed and other special-status species on site (Measure # 15), prevention of wildlife entrapment (Measure # 16), proper materials storage (Measure # 17), and the prohibition of mono-filament netting (Measure # 26).

Caltrans proposes that the temporary impacts of 7.686 acres will be mitigated through on-site restoration at a ratio of 1:1 and 1.644 acres of permanent impacts will be mitigated at a ratio of 3:1 for 4.932 acres as off-site compensation for a total compensation of 12.618. The mitigation proposal is based on the current estimate of impacts to suitable habitat within the range of the species. Caltrans anticipates that the avoidance and minimization measures, in conjunction with the proposed compensatory mitigation, will reduce potential adverse effects to a negligible level. This mitigation may be used to satisfy the conditions of multiple agencies and jurisdictions including the FESA, CESA, and CEQA process. Caltrans will consult with USFWS and CDFW to establish mitigation requirements. During consultation, off-site mitigation location and its criteria will be determined, should off-site mitigation be necessary. The final mitigation proposal will be subject to modification during the agency consultation and permitting processes.

Alameda Whipsnake

The Alameda whipsnake is listed as threatened under both the Federal Endangered Species Act (FESA) and California Endangered Species Act (CESA). It was federally listed on December 5, 1997 (USFWS 1997), and State listed in 1971.

Alameda whipsnakes typically occur on south-, southwest-, and southeast-facing slopes. They require open coastal shrub or chaparral, with small mammal burrows as retreat sites. (Stebbins and McGinnis 2012). Lizards, in particular western fence lizards, are the primary prey item of Alameda whipsnakes. Rocky outcrops are of importance to this species as cover and also to provide hunting opportunities (USFWS 2011).

This species will also venture into adjacent habitats, including grassland, oak savanna, and occasionally oak woodland (USFWS 2002b). Individual whipsnakes have been located over 4 miles from coastal scrub or chaparral habitat (USFWS 2011), though they have been found to occur more regularly within 500 meters (1,640 ft) of scrub habitats. They may also travel along riparian corridors (Swaim 2000 as cited in Jones & Stokes 2006).

Affected Environment

Due to the sensitivity of the species, the specific localities of Alameda whipsnake occurrences are suppressed in the California Natural Diversity Database (CNDDDB). Only the quadrangle in which each occurrence is located is given. There are 93 recorded occurrences of Alameda whipsnake within the 21-quadrangle CNDDDB search area around the BSA (CDFW 2013). Access to the location data for this species was made available through Caltrans to determine occurrences in or near the BSA. There are two occurrences within 2 miles of the Castro Valley segment of the BSA; however, there are no occurrences within the BSA. While the location data was used to help determine potential project impacts on this species, the precise locations were not mapped for this report.

Shrub land habitat within the BSA is suitable to support a resident population of Alameda whipsnakes. In addition, grassland and riparian woodland habitats within the BSA may also be used by individuals dispersing between other, more suitable areas. They are not expected to occur in urbanized areas. When the species was originally listed as threatened under the FESA in 1997, USFWS identified certain crossings that are located within the BSA for this project as important dispersal corridors between populations of Alameda whipsnake that are otherwise isolated from one another by I-580:

“The ability of the whipsnake to interchange among the . . . [Tilden-Briones and Oakland-Las Trampas populations and the Hayward Pleasanton Ridge population] . . . is contingent on their

dispersing over the Caldecott Tunnel in Contra Costa County and under Highway 580 in Alameda County at the Eden Canyon interchange, the Dublin Boulevard undercrossing [Schafer Ranch Road], or where San Lorenzo Creek passes under the highway.” (USFWS 1997).

Two of the crossings referred to above, the Eden Canyon interchange and the Dublin Boulevard undercrossing (Schafer Ranch Road) are located within the BSA, and therefore the BSA contains a vital linkage between the Tilden-Briones and Oakland-Las Trampas populations and the Hayward-Pleasanton Ridge population of Alameda whipsnake. The paved surface of I-580 is not considered to be a viable dispersal corridor for Alameda whipsnake because heavy traffic likely causes mortality of all individuals attempting to cross.

Critical habitat was designated for Alameda whipsnake in 2006 (USFWS 2006a), although there is none designated within the BSA. The nearest designated Alameda whipsnake critical habitat (Unit 3: Hayward-Pleasanton Ridge) is located adjacent to the BSA on the south side of I-580 in Castro Valley between PM 22.0 and 26.2. This critical habitat unit generally includes all of the undeveloped hills south of I-580, west of I-680, and north of Niles Canyon Road.

Due to the high mobility of this species, the presence of known populations and critical habitat in the region, and the presence of suitable shrub land habitat and dispersal corridors within the BSA, Alameda whipsnake may occur anywhere in the Castro Valley segment of the BSA between PM 21.7 and PM 26.6. Alameda whipsnakes are not expected to occur within the BSA west of PM 26.6 due to urban development. Based on known range and occurrence data points, Caltrans has excluded the Altamont Pass segment of the BSA as being able to support Alameda whipsnake.

Environmental Consequences

Caltrans has concluded that Alameda whipsnakes have a relatively low potential for occurring within the construction area but cannot rule out the risk that the species may be exposed to direct harassment, harm, injury, or mortality as a result of construction activities. These activities include initial site preparation, use of heavy equipment for excavation and backfill, handling of stockpiles and stored materials, ramp resurfacing, ramp widening, slope regrading for ramp widening, construction of ramp metering and maintenance vehicle pullouts (MVPs), installation of traffic operation system (TOS) elements and guard rails, and electrical trenching. The avoidance and minimization measures outlined above and detailed in the General Avoidance and Minimization Measures section below are intended to reduce the likelihood of direct take during project activities.

Excavation, fill, and other construction activities will impact a total of 2.599 acres of grassland habitat in the Castro Valley segment of the project that provides potential foraging and dispersal habitat for Alameda whipsnake. Caltrans anticipates the temporary impacts will total 2.125 acres and permanent impacts will total 0.474 acres. The habitat within the construction area is considered to be of marginal quality because of the high levels of roadside disturbance associated with I-580. Caltrans anticipates that construction will push this zone of roadside disturbance further outward into less disturbed habitat, particularly at ramp widening locations, causing degradation of habitat due to edge effects. Caltrans concludes that the proposed modifications to Alameda whipsnake habitat within the construction area may have a potential adverse impact on the behavioral patterns of some individuals of this species, including foraging, migration, and hibernation. Because breeding habitat – rocky outcrops and scrub habitats -- is not present in the construction area, Caltrans does not anticipate any adverse impact to breeding habitat or breeding behavior within the construction area as a result of the proposed project.

The project will not alter any of the existing crossings under I-580 that could be used by Alameda whipsnakes, such as the Eden Canyon interchange and the Dublin Boulevard undercrossing (Schafer

Ranch Road). Therefore, the project is not expected to contribute to further fragmentation of Alameda whipsnake populations.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to Alameda whipsnake during project construction. Species specific measures include biological monitoring (Measure #4), pre-construction surveys (Measure #7), wildlife exclusion fencing (Measure #14), notification of listed and other special-status species on site (Measure #15), prevention of wildlife entrapment (Measure #16), proper materials storage (Measure #17), and the prohibition of mono-filament netting (Measure #26).

Caltrans proposes that 2.125 acres of temporary impacts will be mitigated at a 1:1 ratio as on-site restoration and 0.474 acres of permanent impacts will be mitigated at a 3:1 ratio for 1.422 acres of off-site compensation for a total compensation of 3.547. The mitigation proposal is based on the current estimate of impacts to suitable habitat within the range of the species. Caltrans proposes this compensatory mitigation for Alameda whipsnake to meet the requirements of California FGC Section 2081 for obtaining an ITP. Caltrans anticipates that the avoidance and minimization measures, in conjunction with the proposed compensatory mitigation, will reduce potential adverse effects to a negligible level. This mitigation may be used to satisfy the conditions of multiple agencies and jurisdictions including the FESA, CESA, and CEQA process. Caltrans will consult with USFWS and CDFW to establish mitigation requirements. During consultation, off-site mitigation location and its criteria will be determined, should off-site mitigation be necessary. The final mitigation proposal will be subject to modification during the agency consultation and permitting processes.

San Joaquin Kit Fox

The San Joaquin kit fox was listed as an endangered species by the State of California in 1971. No critical habitat has been designated for San Joaquin kit fox.

The San Joaquin kit fox is endemic to California. Historically it was known to occur in semi-arid habitats of the San Joaquin Valley and in arid grasslands of the adjacent foothills, from as far north as Tracy, San Joaquin County, and south to Kern County (Grinnell et al. 1937). Within the northern part of its range (including Alameda, Contra Costa, and San Joaquin counties), the San Joaquin kit fox is extremely rare and sparsely distributed due to habitat loss and the constriction of dispersal corridors linking the area to core population centers in the southern part of its range (Orloff et al. 1986, Smith et al. 2006, Clark et al. 2007).

The San Joaquin kit fox is primarily nocturnal and may cover ranges up to 20 miles at night (Girard 2001) when looking for mates, and somewhat less (6 miles) during the pup-rearing season. Home ranges vary from less than 1 square mile up to approximately 12 square miles. Their diet varies geographically, seasonally, and annually. They have been found to prey upon kangaroo rats (*Dipodomys* spp.), whitefooted mice and pocket mice (*Peromyscus* spp.), California ground squirrels, rabbits (*Sylvilagus* spp.), hares (*Lepus* spp.), San Joaquin antelope squirrels (*Ammospermophilus nelsoni*), and ground-nesting birds (Scrivner et al. 1987).

San Joaquin kit fox dens are generally located in open areas with grass or grass and scattered brush, and seldom occur in areas with thick brush. Preferred den sites are in relatively flat, well-drained terrain. Kit foxes maintain multiple dens and den use varies between the breeding season and the dispersal season. Kit fox den use is dynamic in that individual dens may only be used 10 percent of the time, and that individuals rotate amongst dens, often renovating and reusing old dens. In addition, San Joaquin kit fox will excavate new dens for temporary shelter (Koopman et al. 1998).

Affected Environment

This species is rare and sparsely distributed within the northern part of its range (Orloff et al. 1986, Smith et al. 2006, Clark et al. 2007), including Alameda County, and the presence of suitable habitat and CNDDDB records nearby suggest that San Joaquin kit foxes may intermittently be present in low numbers in the region. The BSA is at the periphery of the species' range, and the potential that the species would occur within the BSA during the limited time period of construction (approximately 2 years) is low. Although suitably friable soils are present, it is unlikely that San Joaquin kit foxes would dig or use dens within the BSA due to constant disturbance from I-580 and other intersecting roads. San Joaquin kit foxes may use grassland habitat in the Altamont Pass segment of the BSA for dispersal. They are not expected to occur in urbanized areas, except under locally unique conditions, and are not known to occur in Livermore or other urbanized areas of the BSA. Caltrans considers San Joaquin kit fox to be absent from the Castro Valley segment of the BSA due to the known range and occurrence data.

Environmental Consequences

Since this project will occur on the margins of the known current range of San Joaquin kit fox, and because avoidance and minimization measures will be implemented to protect any transient individuals that may enter the construction area, the potential for impacts to San Joaquin kit fox is extremely remote. The limited number of observations of San Joaquin kit fox reported in the area, and a general consensus that the majority of the BSA is outside the typical range of the species, supports the conclusion that if the species does occur, it occurs sporadically and in low numbers. By following the avoidance and minimization measures outlined below and detailed in the General Avoidance and Minimization Measures section below, direct harm or injury from construction equipment and activities would be avoided. Following the minimization measures in regard to vehicle traffic, light and noise, and inspection of den-like structures on-site will be effective in minimizing potential effects. No direct impact to suitable habitat for the San Joaquin kit fox through the destruction of foraging or denning habitats is anticipated. In the rare instance that San Joaquin kit fox are identified, potential indirect impacts will be avoided through buffers outlined in the avoidance and minimization measures. Caltrans concludes that the proposed project would not affect the persistence of local populations of San Joaquin kit fox within the Altamont Pass region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to San Joaquin kit fox during project construction. Species specific measures include biological monitoring (Measure #4), pre-construction surveys (Measure #7), wildlife exclusion fencing (Measure #14), notification of listed and other special-status species on site (Measure #15), and proper materials storage (Measure #17).

Longhorn Fairy Shrimp

The longhorn fairy shrimp, listed as endangered under FESA on September 19, 1994 (USFWS 1994), are found in vernal pools and swales in grasslands and are endemic to the eastern margin of the central Coast Mountains (CDFW 2006).

Affected Environment

Due to the sensitivity of the species, the specific localities of longhorn fairy shrimp occurrences are suppressed in the CNDDDB. Only the quadrangle in which each occurrence is located is given. There are

two recorded occurrences of longhorn fairy shrimp within the 21-quadrangle CNDDDB search area around the BSA, both located in the Byron Hot Springs quadrangle, which is associated with the Altamont Pass segment of the BSA (CDFW 2013). There is one occurrence (CNDDDB occurrence #3) within 2 miles of the Altamont Pass segment of the BSA; however, there are no occurrences within the BSA.

Critical habitat was designated for the longhorn fairy shrimp in 2006 (USFWS 2006c). There is no designated critical habitat within the BSA. The nearest critical habitat for longhorn fairy shrimp is located 2.0 miles to the north of the BSA (north of PM 7.1). In the Altamont Pass segment of the BSA there is an American bulrush-dominated wetland, located under the I-580/I-205 connector ramps that may provide suitable habitat. No wetlands occur within the construction area. A reconnaissance level survey for vernal pool habitats in the Altamont Pass segment of the BSA noted a few scrapes that had the potential to pond for a very limited duration, but no scrapes were observed with ponded water following rain. Numerous drainages that would have brief, fast flows were identified in the BSA, but that type of habitat feature is not considered suitable because the species does not occur in aquatic habitats that have flashy, flowing water. This species has a low potential for presence in the BSA in the wetland identified at the I-580/I-205 connector ramps and in areas where scrapes or borrow pits may be developed.

Environmental Consequences

The lack of apparent suitable habitat features within the construction area results in a conclusion that there will be no impacts to this species by the project. The general avoidance and minimization measures in the General Avoidance and Minimization Measures section below are intended to ensure water quality standards and that no impacts are caused to potential resources outside the defined construction area during project activities. Critical habitat for longhorn fairy shrimp is located outside the BSA; therefore there are no adverse modifications to designated critical habitat for this species. Caltrans concludes that the proposed project would not affect the persistence of local populations of longhorn fairy shrimp within the Altamont Pass region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to resources during project construction ensuring no potential impacts occur outside the construction area through implementation of BMPs.

Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp was listed as threatened under FESA on September 19, 1994 (USFWS 1994). Vernal pool fairy shrimp are found in vernal pools and are endemic to the Central Valley, central coastal mountains, and southern Coast Mountains (CDFW 2006).

Affected Environment

Critical habitat was designated for vernal pool fairy shrimp in 2006 (USFWS 2006c). There is no designated critical habitat within the BSA. The nearest critical habitat for vernal pool fairy shrimp is Unit 19C, located 0.05 miles to the northwest of the BSA (northwest of PM 8.2).

In the Altamont Pass segment of the BSA there is an American bulrush-dominated wetland, located under the I-580/I-205 connector ramps that may provide suitable habitat. No wetlands occur within the construction area. A reconnaissance level survey for vernal pool habitats in the Altamont Pass segment

of the BSA noted a few scrapes that had the potential to pond for a very limited duration, but no scrapes were observed with ponded water following rain. Numerous drainages that would have brief, fast flows were identified in the BSA, but that type of habitat feature is not considered suitable because the species does not occur in aquatic habitats that have flashy, flowing water.

This species has a low potential for presence in the BSA in the wetland identified at the I-580/I-205 connector ramps and in areas where scrapes or borrow pits may be developed.

Environmental Consequences

The lack of apparent suitable habitat features within the construction area results in a conclusion that there will be no impacts to this species by the proposed project. The general avoidance and minimization measures in the General Avoidance and Minimization Measures section below are intended to ensure water quality standards and that no impacts are caused to potential resources outside the defined construction area during project activities. Critical habitat for vernal pool fairy shrimp is located outside the construction area; therefore there are no adverse modifications to designated critical habitat for this species. Caltrans concludes that the proposed project would not affect the persistence of local populations of vernal pool fairy shrimp within the Altamont Pass region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to resources during project construction ensuring no potential impacts occur outside the construction area through implementation of BMPs.

Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp was listed as endangered under FESA on September 19, 1994 (USFWS 1994). Vernal pool tadpole shrimp are found in vernal pools and are endemic to the Central Valley, central coastal mountains, and southern Coast Mountains (CDFW 2006).

Affected Environment

Critical habitat was designated for vernal pool tadpole shrimp in 2006 (USFWS 2006c). There is no designated critical habitat within the BSA. The nearest critical habitat for vernal pool tadpole shrimp is Unit 14B, located 14 miles to the south of the Castro Valley segment of the BSA.

In the Altamont Pass segment of the BSA there is an American bulrush-dominated wetland, located under the I-580/I-205 connector ramps that may provide suitable habitat. No wetlands occur within the construction area. A reconnaissance level survey for vernal pool habitats in the Altamont Pass segment of the BSA noted a few scrapes that had the potential to pond for a very limited duration, but no scrapes were observed with ponded water following rain. Numerous drainages that would have brief, fast flows were identified in the BSA, but that type of habitat feature is not considered suitable because the species does not occur in aquatic habitats that have flashy, flowing water. This species has a low potential for presence in the BSA in the wetland identified at the I-580/I-205 connector ramps and in areas where scrapes or borrow pits may be developed.

Environmental Consequences

The lack of apparent suitable habitat features within the construction area results in a conclusion that there will be no impacts to this species by the project. The general avoidance and minimization

measures in the General Avoidance and Minimization Measures section below are intended to ensure water quality standards and that no impacts are caused to potential resources outside the defined construction area during project activities. Critical habitat for vernal pool tadpole shrimp is located outside the construction area. Therefore there are no adverse modifications to designated critical habitat for this species. Caltrans concludes that the proposed project would not affect the persistence of local populations of vernal pool tadpole shrimp within the Altamont Pass region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to resources during project construction ensuring no potential impacts occur outside the construction area through implementation of BMPs.

American Badger

The American badger is a State Species of Special Concern. They are widely distributed throughout California, occurring primarily in open habitats, such as grassland, oak savanna, and coastal scrub. They are solitary, proficient diggers that construct burrows for resting and rearing young. Badgers use multiple burrows and may dig new ones frequently. American badgers primarily prey upon small fossorial mammals, such as ground squirrels and pocket gophers, by digging them up out of their burrows (Laudenslayer et al. 1990). Declines in this species are often attributed to urban growth, conversion of grasslands to agriculture, and the use of rodenticides (Reid 2006).

Affected Environment

Suitable habitat is present in grassland and shrubland habitats within the BSA, though habitat is of marginal quality due to continual human disturbance associated with I-580. If any American badgers do occur within the Altamont Pass or Castro Valley segments of the BSA, they are likely to be foraging or dispersing rather than establishing permanent dens. They are not expected to occur in urbanized habitats.

Environmental Consequences

Direct impacts to occupied burrows are not expected as a result of the project. Any active badger burrows detected during initial pre-construction surveys within the construction area will be avoided. American badger may be indirectly affected by noise, light, and visual disturbance. Caltrans anticipates that since the construction area is already highly disturbed due to roadway traffic, badgers are highly unlikely to be present within the construction area due to the proximity of the high traffic highway. Caltrans concludes that the proposed project would not affect the persistence of local populations of American badger within the Altamont Pass or Castro Valley regions.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to American badger during project construction. Species-specific measures include pre-construction surveys (Measure #7) and notification of listed and other special-status species on site (Measure #15). If an individual is found, work will not commence until the individual leaves the work area of its own volition.

San Francisco Dusky-Footed Woodrat

The San Francisco dusky-footed woodrat is a State Species of Special Concern and is locally common in undisturbed portions of habitat throughout its range. They inhabit densely forested areas with a brushy understory, such as in riparian areas and oak woodlands. They may also nest in chaparral, coastal sage-scrub, and mixed coniferous forests. Woodrats build large stick nests, referred to as houses, where they live year-round. Nests are generally placed against the base of a tree or a fallen log, though they may also be located above the ground in a tree's branches. Nests on hillsides often include subterranean tunnels dug into the side of the slope. On average, woodrat nests are approximately 4 ft tall and 5 ft wide at the base, though there is considerable variation in size. The nests are very complex, containing multiple chambers for sleeping, food storage, latrines, and other life activities. Woodrat nests provide cover and habitat for numerous other small mammals, reptiles, amphibians, and invertebrate species (Carraway 1991).

The San Francisco dusky-footed woodrat is a subspecies that occurs only in the southern half of the Bay Area (south of Golden Gate through the Santa Cruz Mountains to the Pajaro River and in the East Bay, south of the Suisun Bay along the western slope of the Diablo Range). As a unique subspecies, this designation was confirmed by genetic studies based on mitochondrial DNA (Matocq 2002), although the range may extend slightly farther south along the inner coast range. Woodrats feed mostly on woody plants such as coast live oak, other oaks, big-leaved maple, coffeeberry (*Rhamnus crocea*), alder (*Alnus* sp.), elderberry (*Sambucus* sp.), toyon (*Heteromeles arbutifolia*), and poison oak (Johnston and Cezniak 2004).

Affected Environment

San Francisco dusky-footed woodrats may occur in riparian woodland habitat within the Castro Valley segment of the BSA.

Environmental Consequences

Riparian woodland habitat within the Castro Valley segment of the project provides potential habitat for San Francisco dusky-footed woodrats. Minimal direct (temporary and permanent) impacts to riparian woodland habitat within the construction area are expected as a result of the project. No evidence of woodrat nests was observed during field visits. Caltrans does not anticipate any adverse impacts to the species. Should active woodrat nests be detected during pre-construction surveys within or adjacent to the construction area, Caltrans will coordinate with CDFW. Caltrans concludes that the proposed project would not affect the persistence of local populations of San Francisco dusky-footed woodrat within the Castro Valley region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to San Francisco dusky-footed woodrat during project construction. Species-specific measures include pre-construction surveys (Measure #7) and notification of listed and other special-status species on site (Measure # 15). The need for nest dismantling and relocation will be determined by Caltrans in coordination with CDFW should nests be found within the construction area.

Bat Species

Bats are widespread within California, and may be found in any habitat. They are nocturnal aerial

predators of insects and other arthropods and often forage over water and other moist, open areas where flying insects tend to congregate. Different bat species will roost in a variety of places, including crevices, caves, mines, buildings, bridges, trees, and snags. Some species are nearly or entirely solitary, while others gather in roosting colonies numbering in the thousands or even millions. Roosts used during the day and as maternity colonies tend to be well hidden and require precise temperature conditions. Bats will also use separate night roosts as temporary resting locations while out on their nightly foraging trips. Night roosts have less precise temperature conditions than day roosts, and may be located in more open areas such as overhangs on buildings and open areas on the undersides of bridges.

Four special-status bat species were considered during the preparation of this report based on range, habitat, and recorded occurrences in the region.

Pallid Bat – State Species of Special Concern

The pallid bat is a medium-sized bat that occurs throughout much of California. They may occur in a wide variety of grasslands, shrublands, and woodlands, though they are generally found in dry, open areas at lower elevations. They typically fly low while foraging for prey. Most prey are caught on the ground or gleaned off of foliage. Prey species include beetles, orthopterans, homopterans, moths, spiders, scorpions, and solpugids (wind scorpions or camel spiders) (CDFW 2008). The species is capable of taking heavy-bodied insects such as June beetles and Jerusalem crickets as well (Jameson and Peeters 2004). Pallid bats make day roosts within caves, crevices, mines, and occasionally in hollow trees or buildings. Night roosts may be in more open areas such as under porches and open buildings. Pallid bats are particularly sensitive to disturbance from humans at roost sites (CDFW 2008).

Townsend's Big-eared Bat – State Species of Special Concern

The Townsend's big-eared bat is found throughout California except at high elevations. Maternity colonies have been found in caves, mines, and buildings (Jameson and Peeters 2004), and they will hibernate during the winter in roosts that are cold, but not below freezing. Townsend's big-eared bats feed primarily on small moths, though beetles and other insects may be taken as well. They capture prey in flight by echolocation and by gleaning from foliage. This species is highly sensitive to disturbance at roost sites (CDFW 2008).

Hoary Bat – State Special Animals List

The hoary bat is a widespread species found in a variety of habitats throughout California. This solitary bat's range includes Canada (near the limit of trees) to South America (Bolster 1998). They are most commonly found in association with forested habitats near water (CDFW 2013). Roosting sites are generally in dense foliage of both coniferous and deciduous trees, at the ends of branches 10 to 40 feet above the ground, and with open flying space below (Bolster 1998). Moths are the primary food source for hoary bats (Black 1974). Females give birth to young between mid-May and early July.

Yuma Myotis – State Special Animals List

The Yuma myotis is common throughout California except for the arid Mojave and Colorado Desert regions. They feed on a variety of small insects and generally forage over water sources such as rivers, lakes, ponds, and stock tanks, most often in open woodland or forest areas. Roosting habitat, which may contain maternity roosts consisting of thousands of individuals during the breeding season, includes caves, crevices, mines, buildings, and large trees. Temporary night roosts may be located in more open areas (CDFW 2008).

Affected Environment

Bats in general are under-reported to the CNDDDB relative to their actual abundance in the environment. They are nocturnal, difficult to detect, and it's difficult to positively identify species when detected. They may be present despite a lack of reported occurrences in the region.

There are two occurrences of pallid bat recorded within 2 miles of the Castro Valley segment of the BSA. One occurrence was recorded in Santa Rita in 2003, approximately 1.20 miles southeast of the BSA. The second was recorded in Hayward, approximately 1.50 miles south of the BSA, but the date of the occurrence is not specified in the CNDDDB (CDFW 2013).

There are no recorded occurrences of Townsend's big-eared bat within 2 miles of the BSA. The nearest occurrence is recorded over 7 miles southwest of the Altamont Pass segment of the BSA (CDFW 2013).

There is one CNDDDB occurrence of hoary bat within 2 miles of the BSA. The occurrence was recorded in 1920 and is located in Hayward approximately 1.95 miles south of the Castro Valley segment of the BSA (CDFW 2013).

There is one occurrence of Yuma myotis recorded within 2 miles of the BSA (Figure 2). The occurrence was recorded in 2003 approximately 1.20 miles southeast of the BSA in the Castro Valley segment of the proposed project (CDFW 2013).

A habitat assessment was conducted for bat species within the BSA. Surveyors inspected all underpasses (bridges that carry I-580 above surface streets, waterways, or other open areas) within the BSA. Overpasses (bridges that carry roads above I-580) were not assessed as they were considered to be unsuitable due to excessive traffic on the freeway below. Surveyed bridges included two perennial stream crossings (bridges over Crow Creek and San Lorenzo Creek at Crow Canyon Road, PM 28.5), six road/railroad crossings (Palo Verde Road at PM 26.2, Schaefer Ranch Road/Hollis Canyon Road at PM 23.9, a railroad/unsealed road at PM 8.0, an unsealed road at PM 3.9, Grant Line Road at PM 1.5, and Midway Road at PM 1.0), and one elevated highway span at PM 7.1. The bridges at the I-580/I-205 interchange and at North Flynn Road were not surveyed as they pass over the highway. The habitat assessment consisted of an inspection of the exterior of the bridges and would not be considered sufficient to confirm the presence or absence of day-roosting bats within the interior cavities of the bridges.

Although live bats were observed or heard at only two bridges, all of the bridges within the BSA were found to have suitable day roost and night roost habitat based on bridge design elements. The bridges are generally of a box-girder construction, which leaves a hollow interior space below the roadbed in the center of the bridge structure. Weep holes designed for drainage could also make this interior space accessible to bats. In addition, some of the larger bridges also had expansion joints, which are lateral seams in the concrete that sometimes leave gaps suitable for bat roosting. Other types of crevices and angles created by the concrete bridge design also create roosting habitat. Confirmed day roosts were observed at two bridges, as evidenced by guano deposits and echolocation calls; however, species or genus-level identifications could not be made. Potentially suitable night roosts were observed in the understructure of bridges in recessed, protected areas that are high enough above the ground to provide a flyway for bats. No evidence of actual night roosts was observed. Riparian habitat at Crow Creek and San Lorenzo Creek may also be suitable roosting habitat.

Environmental Consequences

Within the construction area, roosts at bridges may be indirectly impacted by noise, nighttime lighting, vibration from construction activities, and disturbance from humans and equipment during electrical

conduit installation on, under, or up to bridges at Crow Creek (PM 28.5), San Lorenzo Creek (PM 28.5), Palo Verde Road (PM 26.2), Schafer Ranch Road/Hollis Canyon Road (PM 23.9), the railroad crossing (PM 8.0), Grant Line Road (PM 1.5), and Midway Road (PM 1.0). Caltrans does not anticipate any impacts associated with bats roosting in riparian trees. There are no planned tree removals within the riparian habitat located in the Castro Valley segment of the project.

Avoidance and minimization measures outlined above and detailed in the General Avoidance and Minimization Measures section below have been put in place to diminish the probability of impacts to roosting bats within the construction area. Caltrans concludes that the proposed project would not affect the persistence of local populations of bat species within the Altamont Pass or Castro Valley regions.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to special-status bat species during project construction. Species specific measures include pre-construction surveys (Measure # 7), notification of listed and other special-status species on site (Measure # 15), and the Caltrans Bats and Bridges Technical Bulletin (Erickson et al. 2002) procedures for construction activities around bat roosts (Measure # 8).

Western Pond Turtle

The western pond turtle is a State Species of Special Concern. Western pond turtles range throughout California, from southern coastal California and the Central Valley, east to the Cascade and Sierra Nevada. The known elevation range of the species extends from sea level to 4,690 ft.

Affected Environment

Aquatic habitat is present within the BSA at Mountain House Creek in the Altamont Pass segment of the BSA and Crow Creek and San Lorenzo Creek in the Castro Valley segment of the BSA. The portion of Crow Creek and San Lorenzo Creek within the BSA is in a moderately urban area and all creeks within the BSA may be too shallow to harbor resident populations of western pond turtles. Streams within the BSA could be used as movement corridors between areas of deeper water habitat. Individuals travelling into uplands for nesting or dispersal from other streams or ponds in the vicinity may use grassland, shrubland, or riparian woodland within the BSA. Western pond turtles may occur within these habitats in both the Castro Valley and Altamont Pass segments of the BSA.

Environmental Consequences

Direct impacts to western pond turtle may result from earth-moving activities within 350 feet of Mountain House Creek in the Altamont Pass segment of the project and Crow Creek and San Lorenzo Creek in the Castro Valley segment of the project, and indirect impacts from construction activities near these creeks may include water quality degradation from erosion or sediment loading. However, impacts from earthmoving activities and water quality impacts are unlikely, given the proposed avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below and Caltrans BMPs. Caltrans concludes that the proposed project would not affect the persistence of local populations of western pond turtle within the Altamont Pass or Castro Valley regions.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to western pond turtle during project construction. Species specific measures include pre-construction surveys (Measure #7) and notification of listed and other special-status species on site (Measure #15). In the event that individuals are found, they will be relocated to suitable habitat outside of the BSA.

San Joaquin Whipsnake

The San Joaquin whipsnake is a State Species of Special Concern. This species of snake occurs in grasslands, deserts, chaparral, scrub, and other open terrain (Stebbins 1972) in the southern half of the Central Valley and the eastern slopes of the South Coast Range, with an isolated population on the Sutter Buttes in Sutter County (Stebbins and McGinnis 2012). The San Joaquin whipsnake is a diurnal snake that uses small mammal burrows, brush, and rock piles or climbs into bushes and trees to seek prey or cover or moderate temperature. (Stebbins and McGinnis 2012). San Joaquin whipsnake is a feeding generalist and prey includes rodents, lizards, eggs, other snakes, insects and carrion (Cowles 1946, Stebbins 1954, Wright and Wright 1957, Carpenter 1958, Cunningham 1959, Miller and Stebbins 1964), as well as carrion (Stebbins and McGinnis 2012).

San Joaquin whipsnake populations have been dramatically reduced by the increased development of large-scale agriculture, grazing, and other human land use through most of its range (Stebbins and McGinnis 2012).

Affected Environment

Caltrans has identified suitable grassland and shrubland habitat within the Altamont Pass segment of the BSA. Because there is a CNDDDB occurrence in the area and suitable habitat in the BSA, Caltrans believes that the San Joaquin whipsnake has the potential to disperse through the BSA.

Environmental Consequences

Grassland and shrubland in the Altamont Pass segment of the project provides potential habitat for the San Joaquin whipsnake. The habitat within the construction area is considered to be of marginal quality because of the high levels of roadside disturbance associated with I-580. Caltrans anticipates that construction will push this zone of roadside disturbance further outward into less disturbed habitat, particularly at ramp widening locations, causing degradation of habitat due to edge effects. Implementation of avoidance and minimization measures outlined above and detailed in the General Avoidance and Minimization Measures section below will prevent direct harm or injury to San Joaquin whipsnakes from construction equipment and activities. Caltrans concludes that the proposed project would not affect the persistence of local populations of San Joaquin whipsnake within the Altamont Pass region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to San Joaquin whipsnake during project construction. Species specific measures include pre-construction surveys (Measure #7), wildlife exclusion fencing (Measure #14), notification of listed and other special-status species on site (Measure #15), prevention of wildlife entrapment (Measure #16), proper materials storage (Measure #17), and the prohibition of mono-filament netting (Measure #26). In the event that individuals are found during pre-

construction surveys, they will be relocated to suitable habitat outside of the BSA.

Western Burrowing Owl

The western burrowing owl is a State Species of Special Concern. This species prefers open, flat, or sloped grasslands and requires burrows for nesting and wintering. Typically burrowing owls nest in burrows created by fossorial mammals but will also nest in artificial structures such as open pipes, concrete rubble piles, and small, dry culverts. Western burrowing owls nest and forage in grasslands, the margins of agricultural fields, and urban areas with short vegetation or even bare soil because these areas offer a wide field of view. They perch on raised mounds at the mouth of their burrows or on other prominent objects nearby such as rocks, tall plants, fence posts, and debris piles, in order to attain a good field of view (Haug et al. 1993). Western burrowing owls may use multiple burrows simultaneously, often with one primary burrow and several nearby satellite burrows (Peeters 2007). Although they may use the abandoned burrows of badgers, coyotes, and foxes, they are most often found occupying burrows created by California ground squirrels. As such, ground squirrel eradication efforts undertaken for pest management purposes may limit the availability of suitable habitat for western burrowing owls (Gervais et al. 2008).

Affected Environment

Suitable habitat for burrowing owl is present within the BSA in grassland habitat and landscaped areas. Numerous California ground squirrels and their burrows were observed in close proximity to the BSA, particularly in the Altamont Pass segment, and burrowing owls may potentially occur in these areas where vegetation is short.

Environmental Consequences

Direct impacts to occupied burrows are not expected as a result of the proposed project. Any active burrowing owl burrows detected during initial occupancy surveys within or adjacent to the construction area will be avoided (per the measures in the Staff Report on Burrowing Owl Mitigation, CDFG 2012). Burrowing owls may be indirectly affected by noise, light, and visual disturbance. Caltrans has identified that the construction area is highly disturbed by heavy traffic volumes which create ambient noise levels in excess of 67.8 decibels (Caltrans 2013) and high ambient light levels after sundown. Caltrans concludes that the proposed project would not affect the persistence of local populations of burrowing owl within the Altamont Pass or Castro Valley regions.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures below will reduce the potential for effects to western burrowing owl during project construction. Species specific measures from the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game [CDFG] 2012) include occupancy surveys (Measure #12) and notification of listed and other special-status species on site (Measure #15).

If burrowing owls are found to occupy burrowing owl habitat in or adjacent to the construction area, avoidance and minimization measures will be determined in consultation with CDFW.

Migratory Bird Species

Under the federal Migratory Bird Treaty Act (MBTA) and California FGC Sections 3505, 3513, and 3800, migratory birds, their nests, and eggs are protected from disturbance or destruction. Removal or

disturbance of active nests would be in violation of these regulations. All birds, except non-native species, are protected under the MBTA and California Fish and Game Code.

In addition to common bird species, several special-status bird species have at least some potential to occur within the BSA, including:

- Bald eagle (*Haliaeetus leucocephalus*) – Federal Delisted, Protected under the Bald and Golden Eagle Protection Act, State Endangered, Fully Protected Species under California Fish and Game Code
- Golden eagle (*Aquila chrysaetos*) – Protected under the Bald and Golden Eagle Protection Act, Fully Protected Species under California Fish and Game Code
- Cooper’s hawk (*Accipiter cooperii*) – State Special Animals List
- Tricolored blackbird (*Agelaius tricolor*) – State Species of Special Concern
- Yellow warbler (*Dendroica petechial brewsteri*) – State Species of Special Concern
- White-tailed kite (*Elanus leucurus*) – Fully Protected Species under California Fish and Game Code
- California horned lark (*Eremophila alpestris actia*) – State Special Animals List
- Loggerhead shrike (*Lanius ludovicianus*) – State Species of Special Concern
- Black-crowned night heron (*Nycticorax nycticorax*) – State Special Animals List

Affected Environment

In general, habitat within the BSA is of marginal quality due to continual human disturbance from I-580 and high traffic volumes associated with the highway. All land cover types within the BSA may be used by one or more bird species for nesting, even bare ground and urbanized areas. Raptors and many smaller bird species may nest in trees within the BSA, and many other birds may nest among grassland, shrubland, and freshwater marsh land cover types. Bridges on I-580 may also provide nesting habitat. Riparian areas such as those found at Crow Creek and Lorenzo Creek are particularly attractive for nesting birds.

Occurrences are recorded within the 21-quadrangle project region for bald eagle, Cooper’s hawk, loggerhead shrike, and black-crowned night heron (CDFW 2013). None of these occurrence data points are located within the BSA. During field surveys and project site visits, Caltrans biologists did not observe any listed bird species within the BSA.

Environmental Consequences

Grading, tree and brush removal, or vegetation pruning has the potential to impact nesting migratory or other bird species by causing destruction or abandonment of occupied nests and potential disruption of foraging behavior. During construction, common migratory or other bird species may be temporarily displaced by habitat alteration or disturbance due to construction activity. Through the implementation of the proposed avoidance and minimization measures outlined above and detailed in the General Avoidance and Minimization Measures section below, no mortality of migratory or other birds is anticipated. The proposed project has the potential to remove or disturb unoccupied habitat used by nesting or foraging birds. This potential impact would be limited to a relatively small area compared to the extensive nesting and foraging habitat adjacent to the construction area. Caltrans concludes that the proposed project would not affect the persistence of populations of migratory and special-status bird species within the Altamont Pass or Castro Valley regions.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to nesting migratory and other bird species during project construction. Migratory and other bird species-specific measures include a September 1 to February 15 work window for clearing and grubbing activities (Measure #9), pre-construction surveys for nesting birds if work must occur during the nesting season (February 15 to August 31) (Measure #10), if necessary, non-disturbance buffers for active nests found during pre-construction surveys (Measure #11), and notification of listed and other special-status species on site (Measure #15).

Midvalley Fairy Shrimp

The midvalley fairy shrimp is on the State Special Animals List. Midvalley fairy shrimp are small, freshwater crustaceans found in grassland vernal pools, seasonally ponded areas, and other ephemeral ponds (Eriksen and Belk 1999). This species has similar habitat requirements as vernal pool fairy shrimp, longhorn fairy shrimp, and vernal pool tadpole shrimp; however, the midvalley fairy shrimp has a smaller overall range and uses shallower pools (USFWS 2003), and the majority of occurrences for this species are in vernal pools (vs. vernal swales) (USFWS 2004b); however, this species is known to occur in questionable habitats that do not resemble vernal pools.

Affected Environment

There are no recorded occurrences of Midvalley fairy shrimp within 2 miles of the BSA (CDFW 2013). The nearest CNDDDB occurrences are more than 5 miles north of the BSA (CDFW 2013).

In the Altamont Pass segment of the BSA there is an American bulrush-dominated wetland, located under the I-580/I-205 connector ramps that may provide suitable habitat. No wetlands occur within the construction area. A reconnaissance level survey for vernal pool habitats in the Altamont Pass segment of the BSA noted a few scrapes that had the potential to pond for a very limited duration, but no scrapes were observed with ponded water following rain. Numerous drainages that would have brief, fast flows were identified in the BSA, but that type of habitat feature is not considered suitable because the species does not occur in aquatic habitats that have flashy, flowing water.

Caltrans concludes that the Midvalley fairy shrimp has an extremely low potential to be present in the BSA in the wetland identified at the I-580/I-205 connector ramps and in areas where scrapes or borrow pits may be developed.

Environmental Consequences

The lack of apparent suitable habitat features within the construction area results in a conclusion that there will be no impacts to this species by the project. The general avoidance and minimization measures in Section 1.2.2 are intended to ensure water quality standards and that no impacts are caused to potential resources outside the defined construction area during project activities. Caltrans concludes that the proposed project would not affect the persistence of local populations of Midvalley fairy shrimp within the Altamont Pass region.

Avoidance, Minimization, and/or Mitigation Measures

The avoidance and minimization measures listed in the General Avoidance and Minimization Measures section below will reduce the potential for effects to resources during project construction ensuring no potential impacts occur outside the construction area through implementation of BMPs.

General Avoidance and Minimization Measures

To avoid and minimize effects to federally listed species and their habitats within the BSA, Caltrans would implement the following general measures:

1. **Biological Opinion.** Caltrans will include a copy of the Biological Opinion within the construction bid package of the proposed project. The resident engineer or their designee will be responsible for implementing the *Conservation Measures and Terms and Conditions* of the U.S. Fish and Wildlife Service (USFWS) Biological Opinion and the California Department of Fish and Wildlife (CDFW) Incidental Take Permit.
2. **Reinitiation of Consultation.** Caltrans will reinitiate consultation if the project results in effects to listed species not considered in the USFWS Biological Opinion or CDFW Incidental Take Permit.
3. **Agency Approval for Biological Monitors.** Caltrans will submit the names and qualifications of the biological monitor(s) for USFWS and CDFW approval prior to initiating construction activities for the proposed project.
4. **Biological Monitoring.** The agency-approved biologist(s) will be on site during initial ground-disturbing activities, and thereafter as needed to fulfill the role of the approved biologist as specified in project permits. The biologist(s) will keep copies of applicable permits in their possession when on site. Through the resident engineer or their designee, the agency-approved biologist(s) shall be given the authority to communicate either verbally or by telephone, email, or hardcopy with all project personnel to ensure that take of listed species is minimized and permit requirements are fully implemented. Through the resident engineer or their designee, the agency-approved biologist(s) shall have the authority to stop project activities to minimize take of listed species or if he/she determines that any permit requirements are not fully implemented. If the agency-approved biologist(s) exercises this authority, the agencies shall be notified by telephone and email within 48 hours.
5. **Worker Environmental Awareness Training (WEAT).** All construction personnel will attend a mandatory environmental education program delivered by an agency-approved biologist prior to working in the construction area.
6. **Work Window for Listed Species:** All work within suitable habitat for California tiger salamander will occur between April 15 and October 15, when the species is unlikely to be active and there is less potential for an individual to enter the work area, if practicable; otherwise, wildlife exclusion fencing (WEF) will be installed and the WEF will be monitored following rain events.
7. **Pre-construction Surveys:** Prior to initiation of construction activities that include ground disturbance (or bridge disturbance for bats), pre-construction surveys will be conducted by an agency-approved biologist for listed and other special-status species. These surveys will consist of walking surveys of the construction area and, if possible, accessible adjacent areas within at least 50 feet of the construction area. The biologist(s) will investigate all potential cover sites. This includes thorough investigation of mammal burrows, appropriately sized soil cracks, tree roots, debris, and (for bat roosts) bridge structures and trees. Nonpoisonous native vertebrates found in cover sites within the construction area will be documented and relocated to an adequate cover site in the vicinity. San Joaquin kit fox surveys should identify kit fox habitat features on the project site, evaluate use by kit fox, and, if possible, assess the potential impacts to the kit fox by the proposed activity. If an occupied den is discovered within the construction area, or within 100 feet of the project boundary, an exclusion zone of a minimum of 100 feet around the den will be established. If the minimum exclusion zone cannot be met, then CDFW and USFWS must be consulted. If a natal/pupping den is discovered, the agencies will be notified immediately.
8. **Construction Activities around Bat Roosts:** As stated in the Caltrans Bats and Bridges

Technical Bulletin (Erickson et al. 2002), any area under a confirmed day or night bat roost that is within visual sight of bats will be designated as an environmentally sensitive area (ESA). To minimize impacts to day roosts during the non-volant period when young are present but cannot fly (May 1 to July 31), work should not occur directly under or adjacent to the roost. To minimize impacts to night roosts, construction activities should not occur immediately around a roost site between 10:00 p.m. and sunrise, in particular during the period of highest night-roost use from spring to fall. Clearing of vegetation and grubbing around roosts is to be minimized wherever possible. Combustion equipment (e.g., pumps, generators, vehicles) should not be used immediately under the roost. The presence of personnel under roost sites should be minimized, particularly during the evening exodus. Lights should not be placed in a location where a roost site would be illuminated.

9. **Work Window for Nesting Birds.** To the extent practicable, clearing and grubbing activities will be conducted during the non-nesting season between September 1 and February 15.
10. **Pre-construction Surveys for Nesting Birds.** Pre-construction surveys for nesting birds will be conducted by a qualified biologist no more than 72 hours prior to the start of construction for activities occurring during the breeding season (February 15 to August 31).
11. **Non-Disturbance Buffer for Nesting Birds.** If work is to occur within 100 feet of active raptor nests or 50 feet of active passerine nests, a non-disturbance buffer will be established at a distance sufficient to minimize disturbance based on the nest location, topography, cover, the species' sensitivity to disturbance, and the intensity/type of potential disturbance.
12. **Occupancy Surveys for Western Burrowing Owl.** Occupancy surveys, as defined in the Staff Report on Burrowing Owl Mitigation (CDFG 2012), shall be conducted by a qualified biologist. If burrowing owls are found to occupy burrowing owl habitat in or adjoining the construction area, avoidance and minimization measures will be determined in consultation with CDFW.
13. **Environmentally Sensitive Area (ESA) Fencing.** Environmentally sensitive areas will be delineated with high visibility temporary fencing at least 4 feet in height to prevent encroachment of construction personnel and equipment outside the construction area described in the project description. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the delineated construction area.
14. **Wildlife Exclusion Fencing (WEF).** The construction area for ramp widening within suitable habitat for listed species will be delineated with high visibility wildlife exclusion fencing (WEF) at least 4 feet in height to prevent wildlife from accessing the construction area. The fencing will be removed only when all construction equipment is removed from the site. No project activities will occur outside the delineated construction area. WEF is not required for construction activities occurring outside of suitable habitat for listed species or for the installation of TOS elements or maintenance vehicle pullouts installed independently of ramp widening.
15. **Listed and Other Special-status Species On-Site.** The resident engineer will immediately contact the agency-approved project biologist(s) in the event that a California tiger salamander, California red-legged frog, Alameda whipsnake, San Joaquin kit fox, or other special-status species is observed within a construction zone. The resident engineer will suspend construction activities within a 50-foot radius of the animal until the animal leaves the site voluntarily or an agency-approved protocol for removal has been established.
16. **Prevention of Wildlife Entrapment.** To prevent inadvertent entrapment of listed and other special-status species during construction excavated holes or trenches more than 1 foot deep with walls steeper than 30 degrees will be covered by plywood or similar materials at the close of each working day. Alternatively, an additional 4-foot high vertical barrier, independent of exclusionary fences, will be used to further prevent the inadvertent entrapment of listed species. If it is not feasible to cover an excavation or provide an additional 4-foot high vertical barrier, independent of exclusionary fences, one or more

escape ramps constructed of earth fill or wooden planks will be installed. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. If at any time a trapped listed or other special-status animal is discovered, the on-site biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape or the USFWS and/or CDFW will be consulted. The USFWS and CDFW will be notified within 48 hours.

17. **Materials Storage:** California tiger salamanders, California red-legged frogs, Alameda whipsnakes, San Joaquin kit foxes, and other special-status species, including San Joaquin whipsnake, are attracted to cavity-like structures such as pipes and may seek refuge under construction equipment or debris. They may become trapped or injured if such materials are moved. All construction pipes, culverts, similar structures, construction equipment or construction debris left overnight within the construction area will be inspected by the agency-approved biological monitor prior to being moved.
18. **Night Work.** To the extent practicable, nighttime construction will be minimized, although night work is expected to occur.
19. **Night Lighting.** Except when necessary for construction, driver, or pedestrian safety, lighting of the construction area by artificial lighting during night time hours will be minimized to the maximum extent practicable.
20. **Trash Control.** All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in closed containers and removed at least once a day from the construction area.
21. **Firearms.** No firearms will be allowed in the construction area except for those carried by authorized security personnel, or local, State, or Federal law enforcement officials.
22. **Pets.** To prevent harassment, injury, or mortality of sensitive species, no pets will be permitted in the construction area.
23. **Vehicle Use.** Project employees will be required to comply with written guidance governing vehicle use, speed limits on unpaved roads, fire prevention, and other hazards.
24. **Caltrans Best Management Practices (BMPs).** The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 7-1.01G of the Caltrans' Standard Specifications. Caltrans erosion control BMPs will be used to minimize any wind- or water-related erosion. The State Water Resources Control Board has issued a National Pollution Discharge Elimination System (NPDES) Statewide Storm Water Permit to Caltrans to regulate stormwater and non-stormwater discharges from Caltrans facilities. A Storm Water Pollution Prevention Plan (SWPPP) will be developed for the project, as one is required for all projects that have at least 1.0 acre of soil disturbance. The SWPPP complies with the Caltrans Storm Water Management Plan (SWMP). The SWMP includes guidance for Caltrans design staff to include provisions in construction contracts to include measures to protect sensitive areas and to prevent and minimize stormwater and non-stormwater discharges.

The SWPPP will reference the Caltrans Construction Site BMPs Manual. This manual is comprehensive and includes many other protective measures and guidance to prevent and minimize pollutant discharges and can be found online at: <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>.

Protective measures will be included in the contract, including, at a minimum:

- a. No discharge of pollutants from vehicle and equipment cleaning are allowed into storm drains or water courses.
- b. Vehicle and equipment fueling and maintenance operations must be at least 50 feet away from water courses.
- c. Concrete wastes are collected in washouts and water from curing operations is

- collected and disposed of and not allowed into water courses.
- d. Dust control will be implemented, including use of water trucks and tackifiers to control dust in excavation and fill areas, rocking temporary access road entrances and exits, and covering temporary stockpiles when weather conditions require.
 - e. Coir rolls will be installed along or at the base of slopes during construction to capture sediment and temporary organic hydromulching will be applied to all unfinished disturbed and graded areas.
 - f. Work areas where temporary disturbance has removed the pre-existing vegetation will be restored and re-seeded with a native seed mix.
 - g. Graded areas will be protected from erosion using a combination of silt fences, fiber rolls along toe of slopes or along edges of designated staging areas, and erosion-control netting (such as jute or coir) as appropriate.
 - h. A Revegetation Plan will be prepared for restoration of temporary work areas. Areas will be revegetated with native species.
25. **Water Quality Inspections.** Water quality inspector(s) will inspect the site after a rain event to ensure that the stormwater best management practices (BMPs) are adequate.
 26. **Mono-filament Erosion Control.** Plastic mono-filament netting (erosion control matting) or similar material will not be used for the project because California tiger salamanders, California red-legged frogs, and Alameda whipsnakes, as well as San Joaquin whipsnakes, may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.
 27. **Concrete Waste.** All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of habitat and at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.
 28. **Revegetation Following Construction.** All areas that are temporarily affected during construction will be revegetated with an assemblage of native grass, shrub, or tree species. Invasive, exotic plants will be controlled within the construction area to the maximum extent practicable, pursuant to Executive Order 13112.

V-1. CULTURAL RESOURCES:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

A review of the project to ensure that the undertaking is carried out in a manner consistent with Caltrans responsibilities under 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) for compliance with Section 106 of the National Historic Preservation Act (NHPA) was completed by Caltrans’ District 4 Office of Cultural Resources.

Environmental Consequences

A detailed search of Caltrans records, maps, plans and an intensive pedestrian survey of the project’s Area of Potential Effects (APE) were conducted. A record search was conducted at the Northwest Information Center (NWIC) on January 17, 2013 (NWIC #12-0719). Native American groups were given information about the proposed project and solicited for comments on April 3, 2013. One response was received expressing concern for potential buried archaeological resources. No further comments were received.

The research indicated the potential presence of a prehistoric archaeological site within the project APE. Further inspection of the APE and relevant documents concluded that the archaeological site lied outside Caltrans right of way and outside the APE. The archaeological survey did not identify any other archaeological resources.

Twenty three bridges were identified within project APE. All the bridges were listed as Category 5 (evaluated as Not Eligible for the National Register) in the Caltrans Historic Bridge Inventory. Further consideration is not necessary.

Avoidance, Minimization, and/or Mitigation Measures

In accordance with the Programmatic Agreement (PA), Caltrans has determined that the project has a Finding of No Historic Properties Affected according to Section 106 PA Stipulation IX.A and 36 CFR 800.4(d)(1). Caltrans has determined a Finding of No Impact is appropriate because there are no historical resources within the Project Area limits pursuant to CEQA Guidelines §15064.5 (b)(3).

No avoidance, minimization, and/or mitigation measures have been identified.

If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find.

V-2. PALEONTOLOGY:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Affected Environment

The project area is underlain by highly sensitive formations at many locations along the alignment. These formations are the Cretaceous Great Valley Group (Ku, Kd, Kcu, Kcm, Kjk, Kjkc, Kcv), Miocene Monterey Formation (Tcc, Tt, To) and Miocene-Pliocene San Pablo Group (Tbr, Tc, Tn, Tol)(all three formation crop-out along the Dublin Pass and Altamont Pass areas). The Late Pliocene-Pleistocene (Qpaf) and the Pleistocene (Qt) deposits are located in the eastern Dublin/Livermore and western-Tracy, California areas.

Environmental Consequences

There are various locations within the project area that have the potential for paleontological resources. Construction activities at any of the feature locations can include ground disturbance. The potential of any ground disturbance to affect paleontological resources will depend on the geological features of the specific site.

Avoidance, Minimization and/or Mitigation Measures

Mitigation measures are the best route to work within known paleontological localities. Mitigation procedures include some, but not all, of the actions listed below:

- A project-specific Paleontological Mitigation Plan will be prepared by a qualified principal paleontologist once adequate project design information regarding subsurface disturbance location, depth and lateral extent is available.
- The qualified principal paleontologist will be present at pre-construction meetings to train contractors on paleontological identification during ground-disturbance activities.
- Paleontological monitors, under the direction of the qualified principal paleontologist, will be onsite to inspect excavations for fossils at all times during original ground disturbance involving sensitive geologic formations.
- When fossils are discovered, the paleontologist (or paleontological monitor) will recover them. Construction in these areas may be halted or diverted by the Resident Engineer to allow the prompt recovery of fossils.
- Fossils collected during the monitoring and salvage portion of the mitigation program will be prepared to the point of identification, sorted, and cataloged.
- Prepared fossils, along with copies of all pertinent field notes, photos, and maps, will be deposited in a scientific institution with paleontological collections.
- A Paleontological Mitigation Report will be completed that outlines the results of the mitigation program.

Where feasible, selected road cuts or large finished slopes in areas where critically interesting paleontological features may be left so they can serve as important educational and scientific features. This may be possible if no substantial adverse visual or safety impacts result.

VI. GEOLOGY AND SOILS:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project is located in an area that is susceptible to ground shaking as well as liquefaction. Any proposed engineering design will be carried out in accordance with Caltrans Seismic Design Criteria and Standard Construction Practices.

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 Chapter 3. 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:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed improvements will require roadway excavation in unpaved areas where surface soils might have been contaminated by aerially deposited lead (ADL) from historic leaded-gasoline emissions. A soil investigation that ascertains the level of lead and other potential chemicals of concern will be conducted during the design phase of the project. Based on the investigation results, appropriated special provisions dealing with proper soil handling and management practices and construction worker health and safety concerns will be included in the contract documents.

IX. HYDROLOGY AND WATER QUALITY: Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This discussion is divided into two sections: IX-1. Hydrology, and IX-2. Water Quality.

IX-1. HYDROLOGY:

Based on available Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels for all ramp widening locations, all ramp widening locations are not located within Federal Emergency Management Agency (FEMA) Base Floodplain. The remainder of the project is within FEMA FIRM panel 400G for Alameda County. This panel is not printed which indicates that the site is not in any FEMA special flood hazard area.

IX-2. WATER QUALITY***Affected Environment***

The water bodies listed as a 303(d) are:

<u>Water Body</u>	<u>Pollutants of concern</u>
Alameda Creek	Diazinon
Arroyo De La Laguna	Diazinon
Arroyo Del Valle	Diazinon
Arroyo Las Positas	Nutrient/Eutrophication Biological Indicators
Calaveras Reservoir	Mercury
Del Valle Reservoir	Mercury, PCBs (Polychlorinated biphenyls)
Shadow Cliffs Reservoir	Mercury, PCBs (Polychlorinated biphenyls)

The project site is located within Hydrologic Sub-Area # 204.30, with average annual rainfall of 20.25 inches. The Hydrologic Unit is South Bay; the Hydrologic Area is Alameda Creek. The Watershed Area is 404,764 acres.

The project site is within the San Joaquin Valley Groundwater Basin, Tracy Sub-basin Area Groundwater Basin (Basin ID: 5-22.15) (Groundwater Bulletin 118). The San Joaquin Valley comprises the southernmost portion of the Great Valley Geomorphic Province of California. The Great Valley is a broad structural trough bounded by the tilted block of the Sierra Nevada on the east and the complexly folded and faulted Coast Ranges on the west. The Tracy Sub-basin is defined by the areal extent of unconsolidated to semi-consolidated sedimentary deposits that are bounded by the Diablo Range on the west, the Mokelumne and San Joaquin Rivers on the north, the San Joaquin River to the east, and the San Joaquin-Stanislaus County line on the south. The Tracy Sub-basin is located adjacent to the Eastern San Joaquin Sub-basin on the east and the Delta-Mendota Sub-basin on the south. All of the above mentioned sub-basins are located within the larger San Joaquin Valley Groundwater Basin. The Tracy Sub-basin also lies to the south of the Sacramento Valley Groundwater Basin, and the Solano Sub-basin. The Tracy Sub-basin is drained by the San Joaquin River and one of its major west side tributaries, Corral Hollow Creek. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into the San Francisco Bay. Annual precipitation within the sub-basin ranges from about 11 inches in the south to about 16 inches in the north.

The Basin Plan establishes beneficial uses for waterways and water bodies within the region. The designated beneficial uses for Alameda Creek are Agricultural Water Supply (AGR), Freshwater Habitat (COLD), Ground Water Recharge (GWR), Fish Migration (MIGR), Water Contract Recreation (REC1), Noncontract Water Recreation (REC2), Fish Spawning (SPWN), and Wildlife Habitat (WILD).

Under the Section 303(d) of the Clean Water Act (CWA), it 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, even after point sources of pollution have installed the minimum required levels of pollution control technology. No water bodies near the project area where the project discharges are listed on the 303(d) List of Water Quality Limited Segments.

Environmental Consequences

Caltrans has performed many studies to monitor and characterize storm water runoff from highway throughout the State. Pollutants of Concern in Caltrans runoff found from the "Final Report of the Caltrans BMP Retrofit Pilot Program" were phosphorus, nitrogen, copper, lead, zinc, sediments, general metals (unspecified metals), and litter. Some sources of these pollutants are natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, trash and falling debris from motorists, and the wearing of brake pads.

There is 2.89 acres of Disturbed Soil Area (DSA), reworked area is 2.44 acres, new impervious area is 0.6 acres, and existing impervious area is 83.5 acres.

Avoidance, Minimization, and/or Mitigation Measures

CWA Section 401

Caltrans' District Office of Biological Sciences and Permits has concluded that a CWA Section 404 permit is not required from the U.S. Army Corps of Engineers. As such, a CWA Section 401 certification is not required from either Region 2 or 5.

CWA Section 402

According to the Caltrans NPDES permit and the Construction General Permit (CGP), best management practices (BMPs) will be incorporated into this project to reduce the discharge of pollutants during and after construction to the maximum extent practicable (MEP). Since the project will involve more than one acre of DSA, this project is subject to the CGP.

In general, BMPs fall into three main categories:

1. **Design Pollution Prevention BMPs:** These BMPs are permanent measures to improve storm water quality by reducing erosion, stabilizing disturbed soil areas, and maximizing vegetated surfaces. Design Pollution Prevention BMPs are expected to be required for this project. These may include riprap for drainage improvements. Erosion control measures will be provided on all disturbed areas.
2. **Temporary Construction Site BMPs:** These BMPs are applied during construction activities to reduce the pollutants in the storm water discharges throughout construction. This project will require Construction Site BMPs including, but not limited to:
 - a. **Soil Stabilization:** scheduling, preservation of existing vegetation, slope protection, slope interrupter devices, and channelized flow.
 - b. **Sediment Control:** run-on or run-off control, storm drain inlet protection, sediment or desilting basins, and sediment traps.
 - c. **Tracking Control:** stabilized construction entrances, tire or wheel washes, stabilized construction roadways, and street sweeping and vacuuming.
 - d. **Wind Erosion Control:** hydraulic mulch, hydroseeding, and temporary cover;.
 - e. **Non-Storm Water Management:** temporary stream crossing, clear water diversion,

water conservation practices, dewatering operations, paving and grinding operations, potable water/irrigation, vehicle and equipment operations (fueling, cleaning and maintenance), pile driving operations, concrete curing and finishing, material and equipment use, and structure demolition or removal over water.

- f. **Waste Management and Materials Pollution Control:** material delivery and storage, material use, stockpile management, spill prevention and control, solid and concrete waste management, hazardous waste and contaminated soil management, and sanitary or septic and liquid waste management.

3. **Permanent Treatment BMPs:** These BMPs are permanent water quality controls used to remove pollutants from storm water runoff prior to being discharged from Caltrans right-of-way. Since this project is considered a major reconstruction project, it is not exempt from incorporating Treatment BMPs. Treatment BMPs are permanent devices and facilities treating storm water runoff. Typical Treatment BMPs are biofiltration strips or swales with or without soil amendment, infiltration basins, detention basins, traction sand traps, dry weather flow diversions, media filters (Austin and Delaware), gross solids removal devices, multi-chamber treatment trains, and wet basins. In general, biofiltration strips or swales are the most cost-effective alternative.

Based on the sediment risk and the receiving water risk, the project is classified as "Risk Level 2" under the CGP. The requirements for Risk Level 2 projects are presented in Attachment E of the CGP. In summary, Risk Level 2 projects are required:

- To prepare a Storm Water Pollution Prevention Plan (SWPPP) that has to be developed and certified by a Qualified SWPPP Developer (QSD);
- To develop a Construction Site Monitoring Program by the QSD, which includes the procedures and methods related to the visual monitoring and the sampling and analysis for non-visible pollutants, sediment and turbidity, and pH;
- To prepare a Rain Event Action Plan that will include the current construction activity and strategy or actions to be taken for the implementation of BMPs; and
- To submit a Storm Water Annual Report, annually, that includes a summary and evaluation of sampling and analysis results as well as any violations or exceedance and corrective actions.

X. LAND USE AND PLANNING: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

I-580 runs east-west through the study area and serves both local and regional traffic in the area. The I-580 corridor is surrounded by a diverse mix of land uses as it traverses the cities of Castro Valley, Dublin, Pleasanton, Livermore and the Altamont Pass. The western portion of the corridor, from SR 238 in Castro Valley to the Altamont Pass, is surrounded by residential, commercial, office, and public facility uses.

Environmental Consequences

The proposed project will not change or alter the current land use and therefore will not have any conflict with current land use plans, policies, or regulations within the project area.

Avoidance, Minimization, and/or Mitigation Measures

No avoidance, minimization, and/or mitigation measure is required as there are no impacts to land use or planning identified.

XI. MINERAL RESOURCES: Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
There are no mineral resources within the project area. No avoidance, minimization, and/or mitigation measures are needed.				

XII. NOISE:

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Affected Environment

A *Noise Impact Report* (April 2013) was prepared for the project. It assessed the traffic noise impact resulting from the installation and implementation of a ramp metering system and traffic operations system along I-580 in Alameda County. It determined that residential areas and commercial areas are mixed along both sides of I-580 within the proposed project area. The roadway alignment is basically straight with a roadway profile grade being a few meters above the surrounding residential areas.

Existing noise levels ranging from 53.7 to 67.8 dBA Leq(h) were measured at various locations within the project limits. These sites were chosen from the first row of residences closest to the freeway and were also used to predict future worst-case scenario. The locations of the residences, also known as receptors, are listed in the table below (Table 6).

Table 6: Receptors

Receiver	Location	Existing Peak Noise Level (dBA)	Future Build Worst-case Noise Level (dBA)	Comment
R-1	6427 Almaden Way, Livermore	56.5	56.5	Existing Soundwall, No widening
R-2	729 Hattan Dr/5622 Sunflower Ct., Livermore	67.8*	67.8*	Existing Soundwall, No widening
R-3	704 E. Airway Blvd, Livermore	72.7	72.7	No Existing Soundwall, No widening. Mobil Homes Community.
R-4	537 Saddleback Circle, Livermore	60.1	60.1	Existing Soundwall, No widening
R-5	11443 Rampart Drive, Dublin	61.7	61.7	Existing Soundwall, No widening
R-6	7690 Canyon Meadow Circle, Pleasanton	53.7	53.7	Existing Soundwall, No widening
R-7	8050-8056 Canyon Creek Cir., Pleasanton	57.4	57.4	Existing Soundwall, No widening
R-8	22043 Chaparral Lane, Castro Valley	57.1	57.1	Existing Soundwall, No widening
R-9	Don Castro Regional Park, Castro Valley	58.8	58.8	Existing Soundwall, No widening
R-10	2853 Greenview Drive, Castro Valley	58.8	58.8	Existing Soundwall, No widening
R-11	3627 Juniper Street, Castro Valley	62.1	62.1	Existing Soundwall, No widening
R-12	2750 Norbridge Avenue, Castro Valley	64.2	64.2	Existing Soundwall, No widening
R-13	Rizzo Avenue / Lake Chabot Road, Castro Valley	61.4	61.4	Existing Soundwall, No widening
*Highway traffic noise plus local street traffic noise				

Environmental Consequences

The predicted future noise levels at the project area range from 53.7 to 67.8 dBA Leq (h). Existing and predicted noise levels exceed the Noise Abatement Criteria (NAC) of 67 dBA Leq(h) at two receptors, receptors 2 and 3.

Noise levels were measured at 67.8 and predicted to be 67.8 dBA Leq (h) at receptor 2. The receptor is behind a heavily traveled local street, and the dominant noise is from the local street traffic. While recording the traffic noise level, we noted that without the local street traffic noise, the noise level at this receptor did not exceed 65 dBA, which is below the State Noise Abatement Criteria of 67 dBA Leq (h). Even with the existing noise barrier on the State right-of-way, this receptor still receives noise from the local traffic. Therefore, no noise abatement/mitigation measures can feasibly abate the noise by the required 5 dBA. No additional noise abatement is recommended for this location.

At receptor 3, noise levels were measured and predicted to be 72.7 dBA Leq (h). The level exceeds the NAC and noise abatement must be considered. This location was studied earlier, and a commitment was made to build a soundwall in a prior environmental document (Negative Declaration and Finding of No Significant Impact, I-580 Eastbound HOV Lane Project from East of Greenville Road to Hacienda Drive, November 2007). Therefore, no further consideration for noise abatement is required.

All other sensitive receptors had measured and predicted noise levels well below the NAC. No noise abatement measures are proposed at those locations.

Avoidance, Minimization and/or Mitigation Measures

Under CEQA, the project will not cause a permanent increase in noise levels above the existing or baseline condition.

Construction Noise

It is possible that the high levels of noise generated by construction equipment may annoy residents but it will likely be short-lived at each location. Construction equipment should be required to conform to the provisions in Section 14-8.02 Noise Control, of the latest Standard Specifications. These requirements are meant to minimize the impact from short duration construction noise.

In addition to the aforementioned Standard Specifications, construction noise impacts can be minimized by implementing some or all of the following measures:

- Avoiding construction activities during the nighttime and on weekends.
- Constructing noise barriers as the first order of work.
- Using stockpiled dirt as earth berms where possible.
- Keeping noisy equipment and haul roads away from sensitive receptors.
- Keeping the community informed of upcoming, especially noisy, construction activities and establish a field office to handle noise complaints.

XIII. POPULATION AND HOUSING:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

While the project is expected to improve the efficiency of the highway system, it is not projected to have any growth-inducing effects. No avoidance, minimization and/or mitigation measures have been identified.

XIV. PUBLIC SERVICES:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project is not expected to have any effects to public services. A Traffic Management Plan will be prepared during the design phase to ensure that public service vehicle access is not affected during construction.

XV. RECREATION:

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project would improve the efficiency of the highway system by implementing the TOS elements. It is anticipated that no changes will occur in traffic patterns and thus will not likely increase the use of recreational facilities within the project area. The project will have no effect to any recreational facilities.

XVI. TRANSPORTATION/TRAFFIC:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project does not have any conflict with any plans, congestion management programs, or ordinances. The proposed project would improve the efficiency of the highway system by implementing the TOS elements. It is anticipated that no changes will occur in traffic patterns. The project will not create an inadequate access to emergency services as it will increase the efficiency of the highway system.

XVII. UTILITIES AND SERVICE SYSTEMS:

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project will have no impact to utilities or service systems. No avoidance, minimization and/or mitigation measures have been identified.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The project has minimal impact on potential habitat for special-status species. Please see Section IV. Biological Resources.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project's impacts were taken into consideration with regards to other projects that have occurred, or will occur within the proposed project's area. It was determined that the proposed project's impacts to the following environmental factors do not contribute to cumulative effects with those projects:

- Special-status species
- Archaeological resources
- Paleontological resources
- Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project proposes to improve the efficiency of the highway system by metering the ramps and installing traffic operation system elements. These elements will not have any impacts which will cause any adverse effects on human beings either directly or indirectly.

Chapter 3 – Climate Change

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 (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), 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 CO₂, 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)¹.

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.²

Regulatory Setting

This section outlines state and federal efforts to comprehensively reduce GHG emissions from transportation sources.

State

With the passage of several pieces of legislation including State Senate and Assembly bills and Executive Orders, California launched an innovative and proactive approach to dealing with GHG emissions and climate change.

Assembly Bill 1493 (AB 1493), Pavley, Vehicular Emissions: Greenhouse Gases (2002): This bill requires the California Air Resources Board (ARB) to develop and implement regulations to reduce

¹ http://climatechange.transportation.org/ghg_mitigation/

² http://www.fhwa.dot.gov/environment/climate_change/mitigation/

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.

Executive Order (EO) S-3-05 (June 1, 2005): The goal of this EO is to reduce California's GHG emissions to 1) year 2000 levels by 2010, 2) year 1990 levels by 2020, and 3) 80 percent below the year 1990 levels by 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32.

Assembly Bill 32 (AB 32), Núñez and Pavley, The Global Warming Solutions Act of 2006: 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 and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases."

Executive Order S-20-06 (October 18, 2006): This order establishes the responsibilities and roles of the Secretary of the California Environmental Protection Agency (Cal/EPA) and state agencies with regard to climate change.

Executive Order S-01-07 (January 18, 2007): This order set forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Senate Bill 97 (SB 97) Chapter 185, 2007, Greenhouse Gas Emissions: This bill 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.

Senate Bill 375 (SB 375), Chapter 728, 2008, Sustainable Communities and Climate Protection: This bill requires the California Air Resources Board (CARB) to set regional emissions reduction targets from passenger vehicles. The Metropolitan Planning Organization (MPO) for each region must then develop a "Sustainable Communities Strategy" (SCS) that integrates transportation, land-use, and housing policies to plan for the achievement of the emissions target for their region.

Senate Bill 391 (SB 391) Chapter 585, 2009 California Transportation Plan: This bill requires the State's long-range transportation plan to meet California's climate change goals under AB 32.

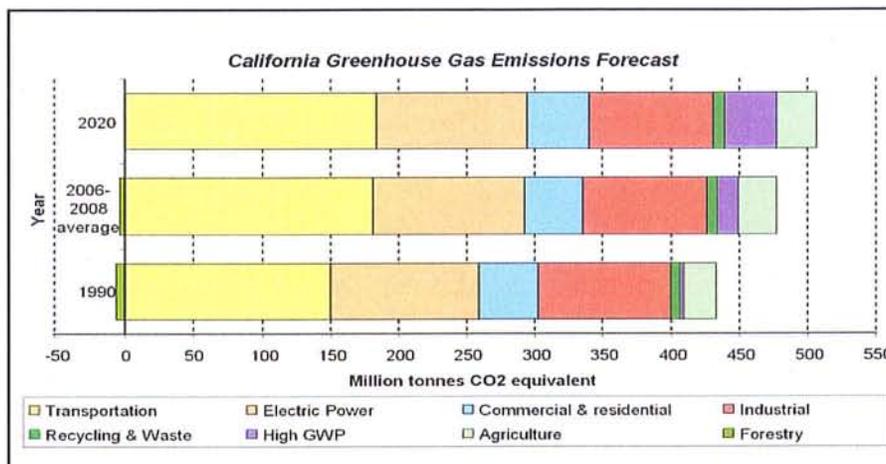
Project Analysis

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.³ 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 to make this determination is a difficult, if not impossible, task.

³ 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 U.S. Forest Service (Climate Change Considerations in Project Level NEPA Analysis, July 13, 2009).

The AB 32 Scoping Plan mandated by AB 32 includes the main strategies California will use to reduce GHG emissions. As part of its supporting documentation for the Draft Scoping Plan, the 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 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.

Figure 3 California Greenhouse Gas Forecast



Source: <http://www.arb.ca.gov/cc/inventory/data/forecast.htm>

Caltrans 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, Caltrans has created and is implementing the [Climate Action Program at Caltrans](#) that was published in December 2006.⁴

The purpose of this project is to improve traffic operations by completing the installation and implementation of ramp metering and TOS elements on eastbound and westbound I-580 in Alameda County. The goal of this project is to improve traffic mobility and safety by mitigating associated traffic conflicts due to weaving and merging maneuvers along I-580 in Alameda County to San Joaquin County. There will be no changes to the mainline and therefore capacity will not be increased. By improving mobility, the project will likely have a decrease in GHG emissions.

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 on-site 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

⁴ 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

innovations in plans and specifications and by implementing better traffic management during construction phases.

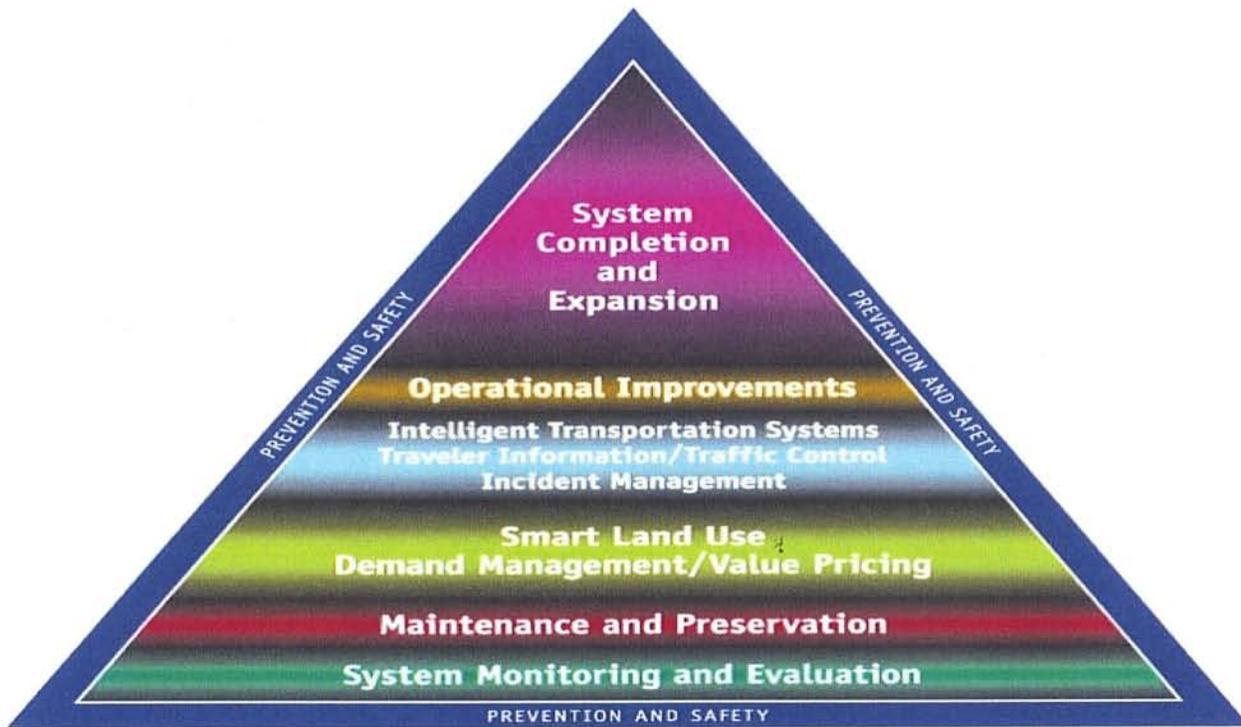
In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be mitigated to some degree by longer intervals between maintenance and rehabilitation events.

CEQA Conclusion

While constructing the project will result in a slight increase in GHG emissions during construction, it is anticipated that the project will not result in an overall increase in operational GHG emissions. While 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 impact and its contribution on the cumulative scale to climate change, Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

Greenhouse Gas Reduction Strategies

Figure 4: Mobility Pyramid



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 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 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 SB 375 (Steinberg 2008), SB 391(Liu 2009) requires the State’s long-range transportation plan to meet California’s climate change goals under 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 7 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 7 Climate Change/CO₂ 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	0.975	7.8
Operational Improvements & Intelligent Transportation System (ITS) Deployment	Strategic Growth Plan	Caltrans	Regions	State ITS; Congestion Management Plan	0.07	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	of	Department of General Services	Fleet Replacement		0.0065
				B20	0.0045	0.045
				B100		0.0225
Non-vehicular Conservation Measures	Energy Conservation Program	Green Action Team		Energy Conservation Opportunities	0.117	0.34
Portland Cement	Office of Rigid Pavement	Cement and Construction Industries	2.5 % limestone cement mix		1.2	4.2
			25% fly ash cement mix		0.36	3.6
			> 50% fly ash/slag mix			
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)⁵ provides a comprehensive overview of activities undertaken by Caltrans statewide to reduce greenhouse gas emissions resulting from agency operations.

The following measure will also be included in the project to reduce the GHG emissions and potential climate change impacts from the project:

- The project would incorporate the use of energy-efficient lighting, such as LED traffic signals. LED bulbs cost \$60 to \$70 each, but last five to six years, compared to the one-year average lifespan of the incandescent bulbs previously used. The LED bulbs themselves consume 10 percent of the electricity of traditional lights, which will also help reduce the project's CO₂ emissions.⁶

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, 2011⁷, 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

⁵ http://www.dot.ca.gov/hq/tpp/offices/orip/climate_change/projects_and_studies.shtml

⁶ Knoxville Business Journal, “LED Lights Pay for Themselves,” May 19, 2008 at <http://www.knoxnews.com/news/2008/may/19/led-traffic-lights-pay-themselves/>.

⁷ <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation>

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)⁸, 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 Agency, 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 Report⁹ 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 State's 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.

⁸ <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>

⁹ *Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future* (2012) is available at http://www.nap.edu/catalog.php?record_id=13389.

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. The proposed project is outside the coastal zone and direct impacts to transportation facilities due to projected sea level rise are not expected.

EO 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. Caltrans continues to work on assessing the transportation system vulnerability to climate change, including the effect of sea level rise.

Currently, Caltrans 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, Caltrans 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, Caltrans 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. Caltrans 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.

Appendices

4

THIS PAGE INTENTIONALLY LEFT BLANK

4

Appendix A

Acronyms

ADL	Aerially Deposited Lead
ALA	Alameda
AMA	Archaeological Monitoring Areas
ARB	Air Resource Board
ASR	Archaeological Survey Report
BAAQMD	Bay Area Air Quality Management District
BSA	Biological Study Area
CA	California
CAA	California Clean Air Act
CCTV	Closed Circuit Television
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CHP	California Highway Patrol
CIDH	Cast-In-Drilled-Hole
CMS	Changeable Message Signs
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Co	County
CO	Carbon Monoxide
CRZ	Clear Recovery Zone
dBA	Decibel
EA	Expenditure Authorization
ES	Edge of Shoulder
ESA	Environmentally Sensitive Areas
FHWA	Federal Highway Administration
ft.	Feet
GHG	Greenhouse Gas
H ₂ S	Hydrogen Sulfide
HOV	High Occupancy Vehicle
HPSR	Historic Property Survey Report
I-680	Interstate 680
ig/m ³	micrograms per cubic meter
LOS	Level of Service
MBGRs	Metal Beam Guard Rails

mg/m ³	milligrams per cubic meter
MND	Mitigated Negative Declaration
MOA	Memorandum of Agreement
MPO	Metropolitan Planning Organization
MTC	Metropolitan Transportation Commission
MVPs	Maintenance Vehicle Pullouts
NAC	Noise Abatement Criteria
NHPA	National Historic Preservation Act
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
NRHP	National Register of Historic Places
O ₃	Ozone
OG	Original Ground
PA	Programmatic Agreement
Pb	Lead
PM	Post Mile
PM	Particulate Matter
ppm	parts per million
PRC	Public Resources Code
RMDG	Ramp Meter Design Guidelines
RMS	Ramp Metering System
Rte	Route
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
TCM's	Transportation Control Measures
TIP	Transportation Improvement Plan
TMC	Traffic Management Center
TMS	Traffic Monitoring Stations
TOS	Traffic Operations Systems
U.S. EPA	United States Environmental Protection Agency
US DOT	United State Department of Transportation
USC	United States Code
USFWS	United States Fish and Wildlife Service

Appendix B

Technical Studies prepared by Caltrans District 4

Visual Impact Assessment, Ala 680 TOS Improvement Project, District 4 Office of Landscape Architecture, June 2013

Noise Impact Report, Freeway Performance Initiative on Route 680 Between Santa Clara County Line and Contra Costa County Line In Alameda County, District 4 Office of Environmental Engineering, July 2011

Air Quality Study Report, Freeway Performance Initiative on Route 680 Between Santa Clara County Line and Alcosta Road In Alameda County, District 4 Office of Environmental Engineering, July 2011

Water Quality Report, District 4 Office of Water Quality Program, September 2013

Natural Environment Study, Interstate 680 Freeway Performance Initiative Project, District 4 Office of Biological Science and Permits, October 2013

Paleontological Identification Report, Office of Geotechnical Design, October 2013

The following technical studies have been removed due to confidentiality:

2013 Archaeological Survey Report for the Proposed Freeway Performance Initiative Project along I-680 in Alameda County, California, PM M0.0/R21.9, EA 4G111, District 4 Office of Cultural Resources, September 2013

2013 Historic Property Survey Report for the Proposed Freeway Performance Initiative Project along I-680 in Alameda County, California, PM M0.0/R21.9, EA 4G111, District 4 Office of Cultural Resources, September 2013

2013 Finding of Effect for the Proposed Freeway Performance Initiative Project along I-680 in Alameda County, California, PM M0.0/R21.9, EA 4G111, District 4 Office of Cultural Resources, September 2013

2013 Environmentally Sensitive Area (ESA) and Archaeological Monitoring Area (AMA) Action Plan for the Proposed Freeway Performance Initiative Project along I-680 in Alameda County, California, PM M0.0/R21.9, EA 4G111, District 4 Office of Cultural Resources, September 2013

The legal authority to restrict cultural resource information can be found in California Government Code sections 6254.10 and 6254(r); California Code of Regulations Section 15120(d); and Section 304 of the National Historic Preservation Act of 1966.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix C

List of Preparers

Tom Packard, Project Landscape Architect, Office of Landscape Architecture

Susan Lindsay, Caltrans Senior Landscape Architect, Office of Landscape Architecture

Sheryl Garcia, Associate Environmental Planner, Office of Environmental Analysis

Alex Choi, Engineer, Office of Environmental Engineering

Shiang Yang, Engineer, Office of Environmental Engineering

Glenn Kinoshita, District Branch Chief, Office of Environmental Engineering

Chris Wilson, District Branch Chief, Office of Environmental Engineering

Craig Tomimatsu, District Branch Chief, Office of Hydraulics

Ronald Karpowicz, Engineering Geologist, Office of Geotechnical Design West

Chris Riden, Branch Chief, Office of Geotechnical Design West

Kristina Montgomery, Archaeologist, Office of Cultural Resources

Lauren Clementino, Architectural Historian, Office of Cultural Resources

Christopher States, District Branch Chief, Office of Biological Sciences and Permits

Elizabeth White, Associate Environmental Planner, Office of Environmental Analysis

Melanie C. Hunt, Associate Environmental Planner, Office of Environmental Analysis

THIS PAGE INTENTIONALLY LEFT BLANK

4

Appendix D

Environmental Commitments Record (Draft)

Form 1 SUMMARY OF REQUIRED PERMITS AND ENVIRONMENTAL COMMITMENT - PA/ED PHASE				
TO: <u>Issa Bouri</u> PROJECT MANAGER		DATE: 13-Nov-13		
ATTN.: <u>Kenneth Nhieu</u> PROJECT ENGINEER		CO. RTE.: ALA.580/SJ 580		
		RU/EA: 4G190		
		P.M. 0.0/8.1, 22.0/30.3,13.5/15.4		
Below is a summary of the required permits, and environmental commitments that must be incorporated into the PS&E, for this project. Please contact Sheryl Garcia @ 510-286-5611 for further information.				
PERMITS AND AGREEMENTS		Y/N	Mit. Plan Req'd (Y/N)	COMMENTS
	CDFG 1601/03 Streambed Alteration Agreement.	N		
	BCDC: Bay Fill Permit	N		
	BCDC: Pub. Access Review	N		
	Coastal Dev. Permit: County	N		
	Coastal Dev. Permit: State	N		
	State Lands Lease Agreement	N		
	RWQCB: NPDES	N		
	RWQCB: Water Qual. Cert.	N		
	Endangered Species Act ¹ Consultation	S F	Y Y	Consultation with CDFW will occur during design. A Biological Assessment has been submitted to USFWS.
	USACOE 404: Nationwide	N		
	USACOE 404: Individual	B		
	USACOE Section 10 Permit	B		
	USCG Section 9 Permit	B		
ENVIRONMENTAL COMMITMENTS	Noise Attenuation	N		
	Erosion Control	N		
	Hazardous Materials Investigation/Treatment	Y	N	A soil investigation will be completed during the design phase of the project.
	ESA (Archaeological)	N	N	
	ESA (Biology)	Y		
	ESA (Historical)	N		
	ESA (Scenic Resources)	N		
	Wetland/Riparian Mitigation	N		
	Biological Mitigation	Y		A Biological Assessment has been submitted to USFWS.
	A copy of the project PS&E must be sent to Environmental for review before finalization.			
<input type="checkbox"/> Attachments _____ <small>cc: Design, Senior Envir. Plan., File</small> OFFICE CHIEF OF ENVIRONMENTAL PLANNING Ver 8.0 July '08				

See the reverse side of this form for additional information.

FORM 2A: PERMITS, AGREEMENTS & MITIGATION (PAM) COMMITMENTS-DESIGN PHASE						
TO: _____, OFFICE CHIEF			DATE:			
ATTN.: <u>Edmund Choy</u> , BRANCH CHIEF			CO. RTE. KP:		ALA-580/SJ 580	
DESIGN OFFICE: _____			RU/EA:		4G190	
			P.E. CONTACT:		Kenneth Nhieu	
			P.M.:		0.0/8.1, 22.0/30.3, 13.5/15.4	
♦ This form contains a summary of <u>attached</u> permits which contain permit conditions governing construction activities on this project ♦ Please contact the Project Engineer or listed individuals above for additional information regarding specific information.						
	Y/N	Permit No.	Issue Date	Exp. Date	Construction Window	Comments
CDFG 1601/03 Streambed Alteration Agreement	N					
SF Bay Conservation & Development Commission	N					
Coastal Dev. Permit: County	N					
Coastal Dev. Permit: State	N					
State Lands Lease Agreement	N					
RWQCB: NPDES Permit	N					
RWQCB: 401 Certification	N					
RWQCB: Contaminated Groundwater Disposal	N					
Endangered Species Consultation Requirements	S					
	F					
USACOE 404: Nationwide*	N					
USACOE 404: Individual	N					
USACOE Regional General	N					
USCG Section 9 Permit	N					
USACOE Section 10 Permit	N					
*Indicate NWP TYPE: _____						
SENIOR ENVIRONMENTAL PLANNER			DATE			
Office of Environmental Planning North/South						
The project PS & E has been reviewed and all permits, agreements and mitigation commitments have been addressed as shown on Forms 2A & 2 B.						
PROJECT ENGINEER			DATE		PROJECT MANAGER	
All permits and their conditions have been reviewed with the contractor and the contractor is aware of the permit conditions.						
RESIDENT ENGINEER			DATE			
<input type="checkbox"/> Attachments cc: Listed Contacts, Envir. Planning Senior Ver 8 July 2008						

See the reverse side of this form for additional information.

FORM 4: PERMITS, AGREEMENTS AND MITIGATION (PAM) COMMITMENTS - MAINTENANCE & OPERATION PHASE

To: _____, Maintenance Manager Region- _____

cc: _____, Branch Chief Maintenance Services
 _____, Maintenance Manager, Specialty Region-

DATE:			
CO. RTE. KP:	ALA-580/SJ 580		
Date Completed			
P.E. Contact:	Kenneth Nihieu		
EA for MAINT.	4G190		
PM:	0108.1, 22.030.3, 13.5/15.4		

Below is a summary of environmental mitigation commitments being carried out for this project which require either: (1) further direct action by Maintenance or (2) your awareness and protection of sensitive resources and/or mitigation sites. Please review and sign this form, maintain a copy and return the signed original to the Senior Environmental Planner listed below. If additional information is required please contact the listed individuals for additional information.

Commitments	(1) / (2)	Actions Required	Map Y/N	Monitoring By	Related Permits	Copy Attach. Y/N	Contact
Erosion Control							
Hazardous Material							
Hazardous Materials ESA							
Archaeological ESA							
Biology ESA							
Historical ESA							
Scenic Resources ESA							
Biology Mitigation							
Habitat Restor./Reveg.							
RWQCB-NPDES All Permits							

Senior Environmental Planner _____ Date _____

Maintenance Manager _____ Date July-01-97

4

Appendix E

Title VI Policy Statement

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY

EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE DIRECTOR
P.O. BOX 942873, MS-49
SACRAMENTO, CA 94273-0001
PHONE (916) 654-5266
FAX (916) 654-6608
TTY 711
www.dot.ca.gov



*Flex your power!
Be energy efficient!*

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.

A handwritten signature in blue ink, appearing to read "Malcolm Dougherty".

MALCOLM DOUGHERTY
Director

"Caltrans improves mobility across California"

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix F - Distribution List

Elected Officials

U.S. Senate

The Honorable Dianne Feinstein
United States Senate
One Post Street, Suite 2450
San Francisco, CA 94104

The Honorable Barbara Boxer
United States Senate
70 Washington Street, Suite 203
Oakland, CA 94607

U.S. House of Representatives

Eric Swalwell
5075 Hopyard Rd. Suite 220
Pleasanton, CA 94588

Jeff Denham
4701 Sisk Road, Suite 202
Modesto, CA 95356

California State Assembly

Joan Buchanan
2694 Bishop Drive, Ste. 275
San Ramon, CA 94583

Bill Quirk
22320 Foothill Blvd, Suite 540
Hayward, CA 94541

Susan Talamantes Eggman
31 East Channel Street, Suite 306
Stockton, CA 95202

California State Senate

Loni Hancock
1515 Clay Street #2202
Oakland, CA 94612

Ellen Corbett
1057 MacArthur Blvd, Suite 206
San Leandro, CA 94577

Cathleen Galgiani
31 E. Channel Ste 440
Stockton, CA 95202

Mark DeSaulnier
1350 Treat Blvd, Suite 240
Walnut Creek, CA 94596

Local Officials

Mayor John Marchand
City of Livermore
1052 S. Livermore Ave
Livermore, CA 94550

Federal Agencies

Environmental Protection Agency, Region IX
Federal Activities Office, CMD-2
75 Hawthorne Street
San Francisco, CA 94105-3901

Natural Resources Conservation Service
Area I
1345 Main Street
Red Bluff, CA 96080

US Army Corps of Engineers, Sacramento District
ATTN: Regulatory Branch
1325 J Street, Room 1480
Sacramento, CA 95814

U.S. Fish and Wildlife Service
2800 Cottage Way W-2605
Sacramento, CA 95825

State Agencies

State Clearinghouse, Executive Officer
1400 Tenth Street, Room 156
P.O. Box 3044
Sacramento, CA 95812-3044

Bay Area Air Quality Management District
Jack Broadbent
Chief Executive Officer
939 Ellis Street
San Francisco, CA 94109

California Air Resources Board
Executive Officer Richard Corey
1001 I Street
Sacramento, CA 95812

California Department of Conservation
 Director Mark Nechodom
 801 K Street, MS 24-01
 Sacramento, CA 95814

California Department of Fish & Wildlife
 Region 3*
 Regional Manager Scott Wilson
 7329 Silverado Trail
 Napa, CA 94558

California Highway Patrol,
 Special Projects Section*
 P.O. Box 942898
 Sacramento, CA 92298

California Office of Historic Preservation*
 1416 Ninth Street, Room 1442
 Sacramento, CA 95814

California Public Utilities Commission*
 Executive Director Paul Clanon
 505 Van Ness Avenue
 San Francisco, CA 94102

Department of Toxic Substances Control*
 1001 I Street
 Sacramento, CA 95814-2828

Native American Heritage Commission*
 Executive Secretary
 1550 Harbor Blvd, Suite 100
 West Sacramento, CA 95691

Regional Water Quality Control Board
 District 2*
 1515 Clay Street, Suite 1400
 Oakland, CA 94612

California Department of Housing and
 Community Development*
 Director
 2020 West El Camino
 Sacramento, CA 95833

Alameda County Planning Commission
 224 W. Winton, Room 111
 Hayward, CA 94544

California Office of Emergency Services
 3650 Schriever Avenue
 Mather, CA 95655

Regional Agencies

Association of Bay Area Governments
 Kenneth Kirkey
 Planning Director
 101 Eighth Street
 Oakland, CA 94604-2050

Metropolitan Transportation Commission
 Doug Kimsey
 Planning Director
 101 Eighth Street – Metrocenter
 Oakland, CA 94607

East Bay Regional Park District
 Chris Barton, Senior Planner
 2950 Peralta Oaks Court
 Oakland, CA 94605

County Agencies

Alameda County
 Clerk of the Board of Supervisors
 1221 Oak Street, Suite 536
 Oakland, CA 94612

Alameda County
 Public Works Agency Director
 Daniel Woldensenbet
 399 Elmhurst Street
 Hayward, CA 94544

San Joaquin County
 Clerk of the Board of Supervisors
 44 N. San Joaquin Street
 Stockton, CA 95202

San Joaquin County
 Public Works Agency Director
 Thomas M. Gau
 1810 East Hazelton Avenue
 Stockton, CA 95205

Local Agencies

Cheri Sheets, City Engineer
 City of Livermore
 1052 South Livermore Avenue
 Livermore, CA 94550