State Route 13 Storm Damage Restoration

Along the west side of State Route 13 from 0.1 mile south to 0.3 mile south of Carson Street Undercrossing in Oakland, California

04-ALA-13-PM 4.8/5.0

1SS410/04130000228

Initial Study
with Mitigated Negative Declaration

Prepared by the
State of California Department of Transportation

October 2014

General Information About This Document

What's in this document?

The California Department of Transportation (Caltrans) has prepared this Initial Study, which examines the potential environmental impacts of alternatives being considered for the proposed project in Alameda County, California. The document describes the project, the existing environment that could be affected by the project, potential impacts from the project, and proposed avoidance, minimization, and/or mitigation measures.

What happens next?

The project has completed environmental compliance after the publication of this document, and filing of the Notice of Determination with the Office of Planning and Research- State Clearinghouse. Once funding is approved, the California Department of Transportation as assigned by FHWA (the Federal Highway Administration) can design, acquire right-of-way for, and construct the project.

Additional copies of this document as well as the technical studies are available at:

> **Caltrans District 4 Environmental office at:** 111 Grand Avenue, Oakland, CA 94612
> **Montclair Branch Library at:** 1687 Mountain Boulevard, Oakland, CA 94611. (See web address for hours of operation or directions: http://oaklandlibrary.org/locations/montclair-branch)
> See Appendix E for a list of bound technical studies.

The document can also be accessed electronically at the following Caltrans website:
http://www.dot.ca.gov/dist4/envdocs.htm

Questions about the project can be directed to:

Yolanda Rivas, Senior Environmental Planner
California Department of Transportation (Caltrans)
111 Grand Ave, Oakland, CA 94612
(510-286-6216)
Email: Yolanda.rivas@dot.ca.gov

For individuals with sensory disabilities, this document is available in Braille, in large print, on audiocassette, or on computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Attn: Yolanda Rivas, Senior Environmental Planner, 111 Grand Avenue, 14th floor, Oakland, CA 94612; (510) 286-6216, or use California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice), or 711.

PROJECT DESCRIPTION AND BACKGROUND

Project title:	State Route 13 Storm Damage Restoration
Lead agency name and address:	California Department of Transportation 111 Grand Avenue Oakland, CA 94612
Contact person and telephone number:	Yolanda Rivas, Senior Environmental Planner; (510) 286-5594
Project location:	On the west side of State Route 13, from 0.1 mile south to 0.3 mile south of Carson Street Undercrossing in Oakland, California. See Figures 1 and 2 and Appendix A for additional mapping.
Project sponsor's name and address:	California Department of Transportation 111 Grand Avenue Oakland, CA 94612
General plan description:	The project is located in the general plan designated area: Detached Unit Residential
Zoning:	The project area is in zone R-H4, Residential Hillside.
Description of project:	This project is located in Alameda County on southbound State Route 13 south of Leona Heights Pedestrian Overcrossing in the city of Oakland. The project proposes to construct a 186-foot long and 14-foot tall soldier pile retaining wall with soil nails. The wall will consist of 28 cast-in-drilled-hole piles (30 feet long) and 2 cast-in-drilled-hole piles (40 feet long) with timber lagging in between. The longer piles are for the wall segment which will span an existing 72-inch reinforced concrete pipe. A concrete barrier slab with concrete barrier (Type 736) will be placed atop the retaining wall. The metal beam guardrail and asphalt concrete dike located beyond the wall, south of the pedestrian overcrossing and metal beam guardrail just to the north of the pedestrian overcrossing, will be replaced with a concrete barrier (Type 736B). The combined length of both barrier types would be approximately 406 feet. Other work would include reconstruction of the outside shoulder, removal of 150' of rolled curb, removal of a light pole and installation of two light poles, installation of a 25-foot long transition railing, and pavement grinding and resurfacing. The existing light pole will be replaced in the same location atop the barrier slab and the second light pole will be placed on a concrete foundation approximately 180 feet north of the first pole. Earthwork would include clearing and grubbing; removal of up to 9 trees; installation of a new pull box, service cabinet, and approximately 50 feet of conduit on the east side of the highway; and reconstruction of the embankment. Drainage improvements would include the replacement of a 12-inch diameter corrugated metal pipe with an 18" corrugated

PROJECT DESCRIPTION AND BACKGROUND

	metal pipe and relocation of its drainage inlet. A potential staging area is located to the south of the proposed retaining wall. Temporary striping would be placed to shift traffic towards the median shoulder during construction. See Appendix A and B for preliminary plans and a detailed project description.
Surrounding land uses and setting:	The project is just off of the highway on a densely vegetated hillside area that is within State right-of-way. The surrounding area consists of hillside residential homes within the Redwood Heights community of Oakland.
Other public agencies whose approval is required:	See Appendix C, Permits and Approvals

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project. Please see the CEQA checklist for additional information. Any boxes *not* checked represent issues that were considered as part of the scoping and environmental analysis for the project, but for which no adverse impacts were identified; therefore, no further discussion of those issues is in this document.

☒	Aesthetics	☐	Agriculture and Forestry	☐	Air Quality
☒	Biological Resources	☐	Cultural Resources	☒	Geology/Soils
☐	Greenhouse Gas Emissions	☐	Hazards and Hazardous Materials	☒	Hydrology/Water Quality
☐	Land Use/Planning	☐	Mineral Resources	☐	Noise
☐	Paleontology	☐	Population/Housing	☐	Public Services
☐	Recreation	☐	Transportation/Traffic	☐	Utilities/Service Systems
☐	Mandatory Findings of Significance				

DETERMINATION:

On the basis of this initial evaluation:

☐	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
☒	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 has been be prepared.
☐	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
☐	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.
☐	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.

Signature: Melanie Brent	**Date:** 10/21/14
Printed Name: Melanie Brent	

Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to construct a 14-foot high, 186-foot long, retaining wall between postmiles 4.8 and 5.0 to repair the roadway shoulder that has undergone settlement due to storm damage. Also included are the construction of a concrete barrier, and installation of safety lighting. All work would be conducted in the existing right-of-way.

Determination

Caltrans has prepared an Initial Study for this project and, following public review, has determined 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: agriculture and forest resources, coastal zone, wild and scenic rivers, land use and planning, population and housing, public services, parks and recreational facilities, cultural resources, mineral resources, paleontology, air quality, noise, traffic and transportation, and hazards and hazardous materials, and climate change.

In addition, the proposed project would have less than significant effects to aesthetics, waters of the U.S., hydrology and water quality, and geology and soils.

In addition, the proposed project would have no significantly adverse effect on the threatened and endangered species—California red-legged frog and the Alameda whipsnake—because the following mitigation measures would reduce potential effects to insignificance:

- Suitable habitat for each species, or suitable multi-species habitat, will be created, restored, or set aside in perpetuity at a ratio of 3:1 for permanent impacts and a 1:1 ratio for temporary impacts for California red-legged frog and Alameda whipsnake. Alternatively, credits will be purchased at an approved U.S. Fish and Wildlife Service mitigation bank to compensate for project impacts.

Melanie Brent

Melanie Brent
Deputy District Director
District 4, California Department of Transportation

10/21/14
Date

FIGURE 1: PROJECT VICINITY MAP

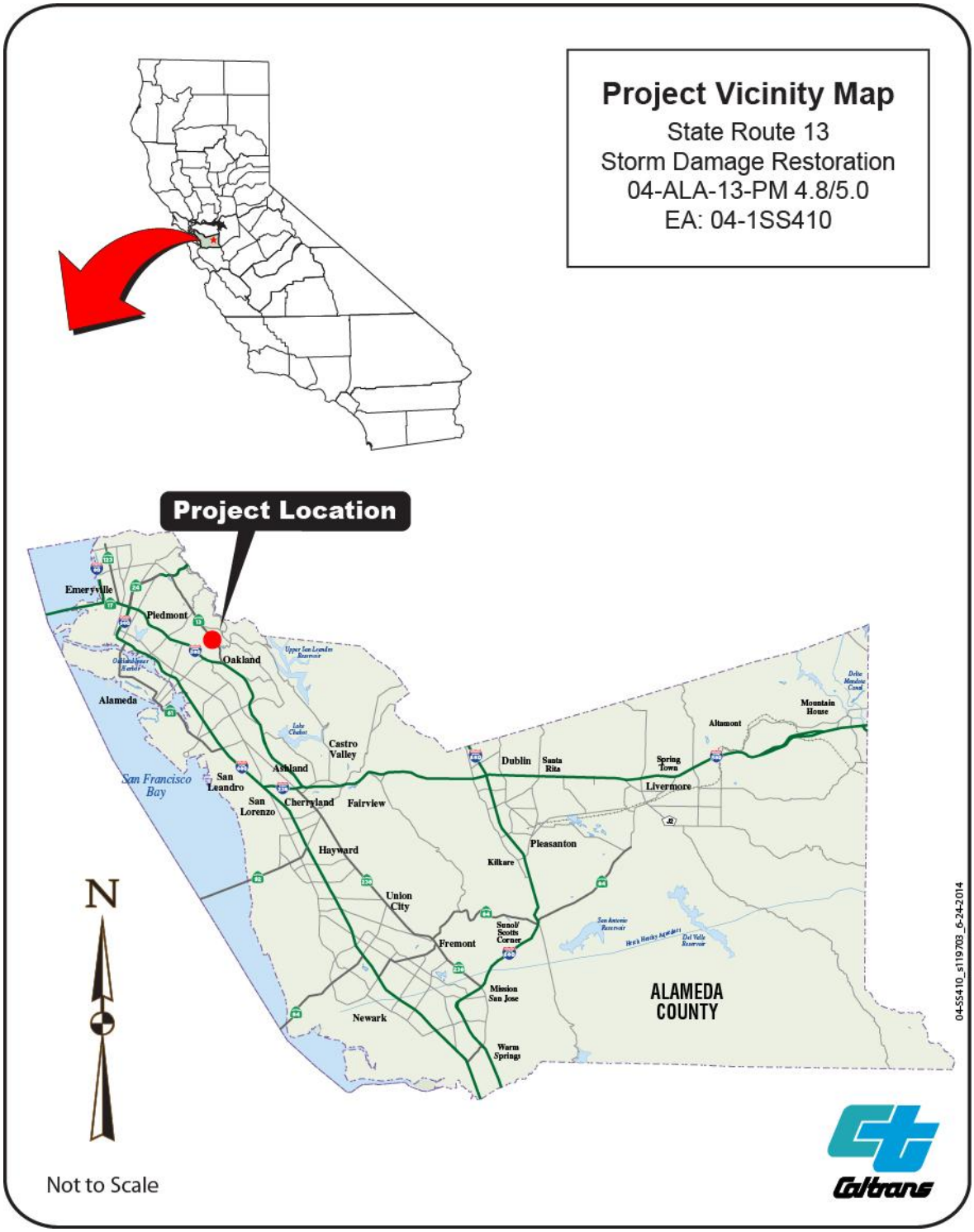
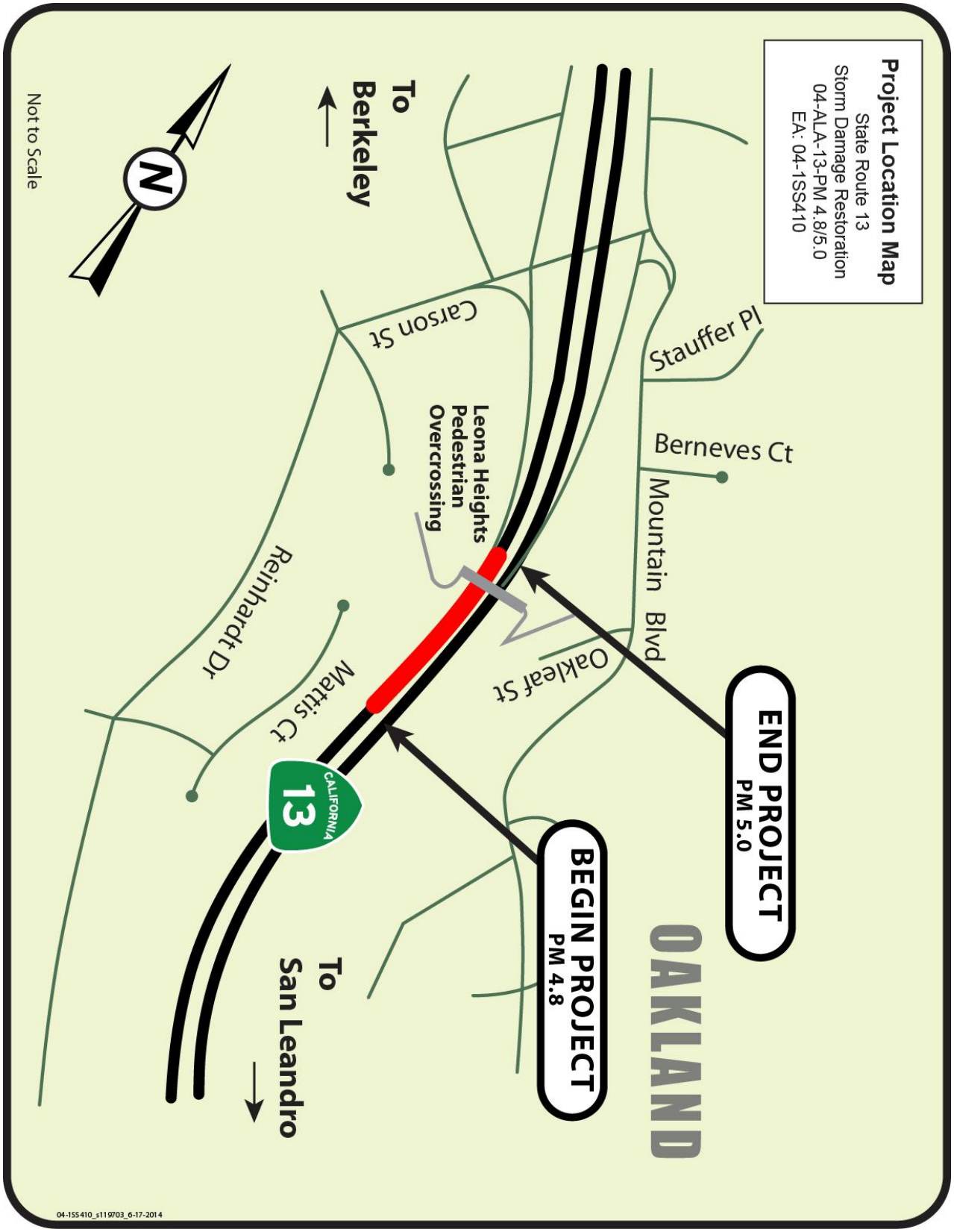


FIGURE 2: PROJECT LOCATION MAP



Section 1: Impacts Checklist

CEQA Environmental Checklist

04-ALA-13	**4.8/5.0**	**1SS410**
Dist.-Co.-Rte.	P.M/P.M.	E.A.

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 a clarifying discussion is needed, the discussion either follows the applicable section in the checklist or is placed within the body of the environmental document itself. The words "significant" and "significance" used throughout the following checklist are related to CEQA—not NEPA—impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
I. AESTHETICS: Would the project:				
a) Have a substantial adverse effect on a scenic vista	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒
II. AGRICULTURE AND FOREST RESOURCES: Would the project:				

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

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

a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non- attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☐	☒
d) Expose sensitive receptors to substantial	☐	☐	☐	☒

pollutant concentrations?				
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒
IV. BIOLOGICAL RESOURCES: Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service?	☐	☒	☐	☐
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
V. CULTURAL RESOURCES: Would the project:				

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

VI. GEOLOGY AND SOILS: Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

VII. GREENHOUSE GAS EMISSIONS: Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	If applicable, an assessment of the greenhouse gas emissions and climate change is included in the body of environmental document. While Caltrans has included this good faith effort in order to provide the public and decision-makers as much information as possible about the project, it is Caltrans determination that in the absence of further regulatory or scientific information related to greenhouse gas 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. Necessary information is located in Technical Studies Bound Separately.

VIII. HAZARDS AND HAZARDOUS MATERIALS: Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

IX. HYDROLOGY AND WATER QUALITY:
Would the project:

a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☒

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☐	☒
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow	☐	☐	☐	☒

X. LAND USE AND PLANNING: Would the project:

a) Physically divide an established community?	☐	☐	☐	☒
b)Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

XI. MINERAL RESOURCES: Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

XII. NOISE: Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

XIII. POPULATION AND HOUSING: Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

XIV. PUBLIC SERVICES:

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

XV. RECREATION:

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of	☐	☐	☐	☒

recreational facilities which might have an adverse physical effect on the environment?

XVI. TRANSPORTATION/TRAFFIC: Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

XVII. UTILITIES AND SERVICE SYSTEMS: Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new	☐	☐	☐	☒

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

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE:

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☐	☒

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

Section 2: Additional Explanations for Questions in the Impacts Checklist

AESTHETICS (CHECKLIST QUESTION I.c)

Affected Environment

This discussion is based on the Visual Impact Assessment dated November 26, 2013.

The proposed project is located in Alameda County on southbound State Route 13 a short distance south of the Leona Heights pedestrian overcrossing in Oakland as shown in Figure 3. The overcrossing provides pedestrian and bicycle access to the City of Oakland's George E. McCrea Memorial Park which is adjacent to State Route 13 at Carson Street and immediately north of the project site.

The project site is on a slope that descends from the highway just beyond the shoulder of the southbound lanes. The slope forms the eastern end of a small, wooded ravine with a stream at its bottom. Trees and shrubs of various size and species grow on the slope to be stabilized by the project. The vegetation forms a nearly continuous border along the highway.

Figure 3 View of State Route 13 looking southbound from Leona Heights pedestrian overcrossing

The route has not been officially designated as a State Scenic Highway, but is identified as a Scenic Route in the Scenic Routes Element of the Alameda County General Plan. It is a 4-lane, divided freeway with a landscaped median separating northbound and southbound traffic. The regional landscape is characterized by suburban development and rolling hills with stands of mature trees and other landscaping. Land use is primarily residential and includes local park lands. The hilly topography and abundant vegetation along the highway reduce the amount of development seen

from the highway. As a result, the corridor appears less developed than it actually is. These characteristics contribute to the pleasing appearance of the highway corridor.

Environmental Consequences

The loss of up to 9 trees on the slope at the location of the proposed tieback wall would be a noticeable change as seen from the highway and from land uses adjacent to the project site. Loss of the trees and their screening effect could briefly expose residential land uses as viewed from the highway. The proposed concrete barriers would be a noticeable new feature. The visual character of the proposed project would be compatible with the existing visual character of the corridor, as the setting includes the nearby Leona Heights pedestrian overcrossing which consists of concrete and chain-link fencing. The face of the retaining wall would consist of wooden timbers which would also be compatible with the visual character of the wooded, canyon-like setting. The retaining wall will not be visible from the roadway.

The visual quality of the existing corridor and surrounding area would not be substantially altered by the proposed project. Since physical modification of landforms and vegetation would be localized and relatively small in scale, the characteristics of vividness, intactness, and unity of the landscape would be minimally affected. The resource change (changes to visual resources as measured by changes in visual character and visual quality) would be low to moderate. The average response of both viewer groups would be moderate-low. The overall visual impact would be low to moderate.

Avoidance, Minimization, and/or Mitigation Measures

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

1. The face of the proposed tieback wall should be buried to the maximum extent feasible in order to reduce and minimize the surface area of the wall that is exposed. The area in front and at the base of the new wall should be backfilled with soil as much as practical.

2. A darkening stain such as Natina or equivalent should be applied to surfaces of the steel piles that would be exposed on the face of the wall. The stain should achieve a dark color that closely matches the color of the timber lagging in order to reduce visual contrast and give the face of the wall a more uniform and unobtrusive appearance.

3. Trees that are removed to construct the proposed wall should be replaced at a density sufficient to create an equal or greater amount of screening at maturity. Native tree species, including oaks, should be used. Landscape plans for replacement planting shall be developed by the Office of Landscape Architecture during the project's final design phase.

BIOLOGICAL RESOURCES (CHECKLIST QUESTIONS IV.a and IV.b)

This discussion is based on the Natural Environmental Study dated May 2014, the Biological Assessment dated January 2014, and the Intake Review Memorandum, which assessed both biological documents, dated September 2014.

Affected Environment

The project area is located in Alameda County East Bay, just south of Redwood Heights, next to McCrea Memorial Park. The project site is an approximately 500-foot section along State Route 13 south of the Carson Street southbound on-ramp, one-half mile north of the intersection of State Route 13 and State Route 580.

The biological study area is within the city of Oakland along a half-mile-long section of southbound State Route 13. The biological study area is approximately 5 acres and includes a proposed construction staging area. The landscape of the biological study area consists of a hillside, vegetated with large canopy trees. The area is immediately south of McCrea Memorial Park, west of Leona Heights Park and east of a residential development. A perennial creek, Lion Creek, and an unnamed intermittent creek flow through McCrea Memorial Park and the biological study area from the northwest and merge at the project site before passing under State Route 13 via a 72-inch diameter concrete pipe and then flows south underground. Horseshoe Creek, which flows through Leona Heights Park, passes under State Route 13, where it merges with Lion Creek. Lion Creek ultimately flows into San Leandro Bay. Adjacent land use consists of residential homes and a recreational park. See Figure 4 for an aerial photograph of the biological study area.

Surveys were conducted in the spring of 2013 and 2014 to determine the presence or absence of sensitive species and habitats within the project area. A query of State and federal threatened, endangered, and special-status species within the Oakland East quadrangle was conducted using the U.S. Fish and Wildlife Service (Service) Endangered Species List Generator which is included as Appendix D. Additional queries were performed of the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants for the Oakland East quad and California Natural Diversity Datatbase (CNDDB) records for special-status species within two miles of the project.

The habitat within the biological study area is suitable for use by a variety of species, but this location is not used as a migration corridor due to residential homes and the highway that act as a barrier. No critical habitat for any sensitive species is present within the biological study area.

The federally threatened California red-legged frog (*Rana draytonii*) and the federally and State threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*) have the potential to occur in

the project area because of the suitable habitat that exists within the biological study area. Caltrans submitted the Biological Assessment to the Service on January 6, 2014 to initiate formal consultation pursuant to Section 7 of the Endangered Species Act of 1973 for the California red-legged frog and Alameda whipsnake. A Biological Opinion for this project was issued by the Service on September 3rd, 2014.

In addition to the federally listed species, five special-status plant species have the potential to occur onsite. There is suitable habitat for the western pond turtle (*Emys marmorata*), a California Department of Fish and Wildlife species of special concern. There is also suitable habitat for the hoary bat *(Lasiurus cinereus)* and migratory birds.

Special-Status Plant Species

Botanical surveys for sensitive plant species that could potentially occur within the biological study area were conducted during the blooming period for target species and when many other plants were evident and identifiable. The following five special-status plant species have the potential to occur onsite and are included in the California Native Plant Society Inventory of Rare and Endangered Plants on lists 1B.1 and/or 1B.2 as species that are rare, threatened, or endangered in California and elsewhere.

Bent-flowered Fiddleneck (Amsinckia lunaris)

The bent-flowered fiddleneck is an annual herb that is native to California and a member of the Boraginaceae family. It is a small plant with yellow flowers and simple or compound leaves. It can be found in coastal bluff scrub, woodlands, and valley foothill grasslands.

Round-leaved filaree (California macrophylla)

The round-leaved filaree is an annual herb that is native to California and a member of the Malvaceae family. Its stem is generally less than 5 centimeters. It has opposite cauline leaves and its flowers are white. It can be found in cismontane woodland and valley and foothill grassland.

Western Leatherwood (Dirca occidentalis)

The western leatherwood is a perennial deciduous shrub that is native to California and a member of the Thymelaeaceae family. It ranges in height from 1 to 3 meters. It has deciduous, broad-ovate covering its buds. Its flowers are yellow and scale-like. It can be found in upland forests, chaparral, woodlands, and riparian forests and woodlands.

Fragrant Fritillary (Fritillaria liliacea)

The fragrant fritillary is a perennial bulbiferous herb that is native to California and a member of the Liliaceae family. It has deciduous, broad-ovate covering its buds. Its flowers are purple and

consist of petal-like whorls. It can be found in coastal prairie, scrub, valley, and foothill grasslands.

Diablo Helianthella (Helianthella castanea)

The Diablo helianthella is a perennial herb that is native to California and a member of the Asteraceae family. It is usually under a meter in height. Its leaves are basal and/or cauline, alternate, opposite, and rarely whorled. Its flowers are yellow or purple disk shaped; style tips are short-triangular. It can be found in upland forests, chaparral, coastal scrub, and valley and foothill grasslands.

Loma Prieta Hoita (Hoita strobilina)

The Loma Prieta hoita is a perennial herb that is native to California and a member of the Fabaceae family. The leaves generally are compound, alternate, and pinnately veined. It can be found in woodlands, chaparral, and riparian woodlands.

Special Status Animal Species

Western Pond Turtle

The western pond turtle is a California Department of Fish and Wildlife species of special concern. It is a small to medium turtle, growing to approximately 8 inches in carapace length. It is limited to the West Coast of the U.S. and Mexico, ranging from western Washington State to northern Baja California.

Western pond turtles occur in both permanent and intermittent waters, including marshes, streams, rivers, ponds, and lakes. They favor habitats with large numbers of emergent logs or boulders, where they aggregate to bask. They also bask on top of aquatic vegetation or position themselves just below the surface where water temperatures are elevated. Individuals display aggressive behavior toward one another while sunning.

Western pond turtles seek refuge in deep water, under submerged logs and rocks, in beaver burrows and lodges, and by “swimming” into deep silt. They are extremely difficult to detect under these conditions. Turtles can be encouraged to use artificial basking substrate, or rafts, which allows for easy detection of the species in complex habitats.

Hoary Bat

The hoary bat is a species of bat in the vesper bat family, Vespertilionidae. It occurs throughout most of North America and much of South America, with disjunct populations in the Galápagos Islands.

The hoary bat averages 5 to 5.7 inches long with a 15.7-inch wingspan and a weight of 0.9 ounces. Its coat is dark brown, and the hairs on its back are frosted with silver. The body is covered in fur except for the undersides of the wings.

The bat normally roosts alone on trees, hidden in the foliage, but on occasion has been seen in caves with other bats. It prefers woodlands, mainly coniferous forests, but hunts over open areas or lakes. It hunts alone, and its main food source is moths.

The bat is migratory and may travel from Canada as far south as the southern U.S. or Bermuda.

Threatened and Endangered Species

California Red-legged Frog

The California red-legged frog is a federally threatened species. It is the largest native frog in the western United States. It is endemic to California and Baja California at elevations ranging from sea level to approximately 5,000 feet. It has been extirpated from 70 percent of its original range due to elimination or degradation of habitat through land use and development as well as habitat invasion by non-native aquatic species. The California red-legged frog is named for its pink or red posterior abdomen and hind legs.

California red-legged frogs typically breed from November through March as males call to females from the margins of deep ponds and slow streams. Breeding habitat generally consists of a well-defined creek and riparian zone with permanent pools usually deeper than 2.5 feet. Stock ponds are also commonly used as breeding ponds. After fertilization, females lay a jellylike mass of 2,000 to 5,000 reddish-brown eggs in the water and attach them to a brace such as emergent vegetation or twigs. The tadpoles usually take three weeks to hatch and metamorphose into juvenile frogs in 11-20 weeks. Juveniles can be active at any time of day, while adults tend to be nocturnal. California red-legged frogs may disperse from breeding sites at any time of year and can travel up to 2 miles without regard for topography, vegetation type, or the presence of riparian corridors. Dispersal is much more common, however, during the rainy season.

The closest documented occurrence, dated 1931 in the California Natural Diversity Database, is located 4 miles north of the project site.

Alameda Whipsnake

The Alameda whipsnake is a state threatened and federal listed species. It is a slender, fast-moving, diurnally active snake with a black or dark brown back and distinct yellow-orange stripes running laterally down its sides. The Alameda whipsnake reaches a length of 3 to 4 feet. It is also commonly known as the “Alameda striped racer.” The Alameda whipsnake is one of two subspecies of *Masticophis lateralis*. The other subspecies, the chaparral whipsnake

(*Masticophis lateralis lateralis*), is distributed from Northern California (west of the Sierran crest and desert) to central Baja California.

The Alameda whipsnake currently inhabits the inner coast range in chaparral communities (coastal sage scrub) mainly in Contra Costa and Alameda counties, with some occurrences also in San Joaquin and Santa Clara counties. Although its home range focuses on open shrub communities dominated by coyote brush, the snake can venture out close to a mile into adjacent grassland, oak savannah, and other woodland communities in search of prey. These snakes are typically found on south-, southwest-, and southeast-facing slopes where they can take advantage of maximum sun exposure.

Alameda whipsnakes are extremely fast, holding their heads high off the ground in search of their favorite prey: the western fence lizard (*Sceloporus occidentalis*). Other prey include skinks, frogs, snakes, and birds. After basking in the morning sun, they attain the highest active body temperature of any Bay Area reptile, giving them a competitive advantage over the later emerging western fence lizards and increasing their prey capture rate. Rock outcrops serve as rest areas and hibernacula as well as providing habitat for lizard populations.

The snakes are most active during the spring mating season from mid-March through mid-June. During this time, males roam their home ranges in search of females who remain near their hibernacula where mating occurs. Activity continues into late summer and tapers off into early fall. By November, the snakes usually retreat into hibernacula where they remain dormant until March.

The California Natural Diversity Database includes two records within two miles of the project. The first is a 1953 observation of Alameda whipsnake in Leona Heights Park, and the second is a 2008 observation at the intersection of Skyline Boulevard and Crestmont Drive in Redwood Regional Park approximately 0.8 miles from the project area. The project is located approximately 1.45 miles southwest from Service designated critical habitat for this species. .

Migratory Birds

The Migratory Bird Treaty Act makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations. The nesting season is defined as February 15 to September 1. The project location provides suitable nesting habitat for migratory birds that are protected under the Migratory Bird Treaty Act.

Environmental Consequences

Special-Status Plant Species

Botanical surveys were conducted in 2013 and 2014 in the biological study area during the blooming period for the bent-flowered fiddleneck, round-leaved filaree, western leatherwood, fragrant fritillary, Diablo helianthella, and Loma Prieta hoitas. None were observed onsite during these surveys. These plants are not expected to occur within the biological study; therefore, no impacts to these plants are anticipated.

Special Status Animal Species

Western Pond Turtle

Although no protocol surveys were completed for the western pond turtle, Lion Creek, which flows through the project area, contains suitable aquatic habitat for the western pond turtle.

Construction is not anticipated to directly impact Lion Creek. Construction activities will temporarily impact a culvert that flows into a cement-lined portion on an unnamed creek, which flows into Lion Creek. No impacts to the western pond turtle are expected.

Hoary Bat (Lasiurus cinereus)

Protocol surveys for bats were not completed. No bat species were observed onsite during field surveys within the biological study area. With implementation of avoidance and minimization measures, no impacts to bat species are expected.

Threatened and Endangered Species

California Red-legged Frog

A habitat assessment was conducted during the summer of 2013 and found that the project site contained suitable upland and aquatic breeding habitat. Lion Creek, an intermittent stream that flows through the project site is a potential prey base for frogs, with plenty of vegetation near the waterway to provide suitable refuge for the California red-legged frog.

Construction activities will result in the permanent loss of 0.0937 acre and the temporary loss of 0.392 acre of California red-legged frog upland habitat. Therefore, the proposed project may affect and is likely to adversely affect the California red-legged frog.

Alameda Whipsnake

A habitat assessment was conducted in the summer of 2013 and found that the project site contained suitable aquatic and upland habitat for the Alameda whipsnake. The project site contains a suitable prey base, and there is sufficient vegetation to provide adequate cover for the Alameda whipsnake within the upland areas.

Construction activities will result in the permanent loss of 0.0937 acre and the temporary loss of 0.392 acre of Alameda whipsnake upland habitat. Therefore, the proposed project may affect and is likely to adversely affect the Alameda whipsnake.

Migratory Birds

No protocol surveys were conducted during the 2013 or 2014 survey season. However, the project location provides suitable nesting habitat for migratory birds that are protected under the Migratory Bird Treaty Act. A red-shouldered hawk was observed onsite during the 2013 botanical surveys.

The proposed project would remove trees and shrubs that provide nesting habitat for birds protected by the Migratory Bird Treaty Act. Migratory birds could nest in the trees and shrubs to be removed and nearby trees during the nesting season between February 15 and September 1. Migratory birds occupying these trees and shrubs during their removal may be adversely harmed. Any noise or vibration can affect the behavior and success of nesting birds.

Avoidance, Minimization, and/or Mitigation Measures

Special-Status Plant Species

Construction will be confined to the smallest practicable area possible so that the least amount of potential habitat is disturbed.

Additionally, provisions of the California's Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the California Department of Fish and Wildlife (Department) at least 10 days in advance of any change in land use. This allows the Department to salvage listed plant species that will otherwise be destroyed. Caltrans is required to conduct botanical inventories and consult with the Department during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

Special-Status Animal Species

Western Pond Turtle

The avoidance and minimization measures that have been identified for the California red-legged frog will also benefit the western pond turtle. If a western pond turtle is found within the construction area, the turtle will be relocated to a suitable area outside of the construction zone.

Hoary Bat

Additional surveys would be needed within a year of the start of construction to reassess whether bat species are present. If it is determined that bat species are using trees within the project

impact area, tree removal would need to be completed when bat species are confirmed to have left the area.

Threatened and Endangered Species

California Red-legged Frog

The following measures will be implemented to minimize impacts to the California red-legged frog:

1. At least 15 days prior to the onset of any construction-related activities, Caltrans will submit to the Service for approval, the name(s) and credentials of biologists it wishes to conduct activities specified for this project. Information included in a request for authorization will include, at a minimum: (1) relevant education; (2) relevant training on species identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized for such activities by the Service; (3) a summary of field experience conducting requested activities (to include project/research information); (4) a summary of biological opinions under which they were authorized to work with the listed species and at what level (such as construction monitoring versus handling); this will also include the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project; (5) A list of Federal Recovery Permits [10(a)1(A)] held or under which are authorized to work with the species (to include permit number, authorized activities, and name of permit holder); (6) any relevant professional references with contact information. No project construction will begin until Caltrans has received written Service approval for biologists to conduct specified activities.

2. Prior to initial ground disturbance, a Service-approved biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of the California red-legged frog, migratory birds, and their habitats; the occurrence of these species within the project footprint and action area; an explanation of the status of these species and protection under the Act and Migratory Bird Treaty Act; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction and project personnel. Upon completion of the training program, personnel will sign a form stating that they attended the program and

understand all the avoidance and minimization measures and implications of Act. Sign-in sheets will be kept on file and will be available to the Service upon request.

3. A Service-approved biologist(s) will be onsite during all activities that may result in the take of the California red-legged frog.

4. No more than 20 working days prior to any ground disturbance, preconstruction California red-legged frog surveys will be conducted by a Service-approved biologist. The Service-approved biologist(s) will investigate all potential California red-legged frog cover sites within the action area. This includes full investigation of mammal burrows within the construction footprint with scoping or excavation. The entrances of burrows will be collapsed following investigation in areas that will be subject to ground disturbance.

5. Safety permitting, a Service-approved biological monitor will also investigate areas of disturbed soil for signs of California red-legged frogs within 30 minutes following the initial disturbance of that given area.

6. The Service-approved biologist(s) will permanently remove, from the project site, any exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

7. The resident engineer or his or her designee will be responsible for implementing the conservation measures and terms and conditions of the Biological Opinion and will be the point of contact for the project. The resident engineer or his or her designee will maintain a copy of the Biological Opinion onsite whenever construction is taking place. The person's name and telephone number will be provided to the Service at least 30 calendar days prior to groundbreaking. Prior to groundbreaking, the resident engineer will submit a letter to the Service verifying that he or she possesses a copy of the Biological Opinion and understands the terms and conditions.

8. The resident engineer will stop work at the request of the Service-approved biologist(s) if activities are identified that may result in the take of the California red-legged frog. Should the biologist(s) or the resident engineer exercise this authority, the Service will be notified by telephone and e-mail within one (1) working day. The Service contact will be the Coast-Bay/Forest Foothills Division Chief in the Sacramento Fish and Wildlife Office at (916) 414-6600.

9. If, at any time, a California red-legged frog is discovered, the resident engineer and the biological monitor will be informed immediately. The biological

monitor will determine if relocating the animal is necessary and will work with the Service prior to handling or relocating unless otherwise authorized.

10. Construction access, staging, storage, and parking areas will be located within the described project footprint outside of identified sensitive habitat areas or outside of the right-of-way in areas environmentally cleared and permitted. Access routes, staging and storage areas, and contractor parking will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.

11. Vegetation that is within the cut-and-fill line or is growing in locations where permanent structures will be placed (for example, road alignment, shoulder widening, and bridge abutments) will be cleared. In areas that will be subject to revegetation, plants will only be cleared where necessary and will be cut above soil level. This will increase the potential of those plants to re-sprout after construction. All clearing and grubbing of woody vegetation will occur by hand or by using construction equipment such as backhoes and excavators, with the exception of trees (which will be removed by chainsaw, as needed). All cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site.

12. A Service-approved biologist will be present during all vegetation clearing and grubbing activities. If a California red-legged frog is discovered during these activities, the Service-approved biologist, through the resident engineer or his or her designee, will halt all work within 50 feet of the animal and will contact the Service to determine how to proceed.

13. Except for limited vegetation clearing, work within California red-legged frog habitat will be restricted to between June 1 and October 15.

14. Caltrans will restore temporarily disturbed areas to the preconstruction function and values to the maximum extent practicable. Exposed ground will be reseeded with native grasses, tree species, and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted based on local species composition. Any revegetation plans will be reviewed and approved by the Service. In addition, annual monitoring reports on the success of the plantings will be provided to the Service for review.

15. Nighttime construction will be minimized.

16. Firearms will be prohibited at the project site, except for those carried by authorized security personnel, or local, state or federal law enforcement officials.

17. If requested, before, during, or upon completion of groundbreaking and construction activities, Caltrans will allow access by Service personnel to the action area to inspect project effects. Caltrans requests that all agency representatives contact the resident engineer prior to accessing the work site and review and sign the Safe Work Code of Practices, prior to accessing the work site for the first time.

18. Prior to the start of construction, areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed will be clearly delineated using high-visibility orange fencing. The fencing will remain in place throughout the duration of the project and will prevent construction equipment or personnel from entering sensitive habitat areas. The final project plans will depict all locations where fencing will be installed and how it will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the sensitive areas.

19. California red-legged frog exclusionary fencing will be placed at the edge of active construction areas to restrict snake and frog access into the work area. The fencing will consist of heavy and rigid polymer matrix designed for small vertebrate exclusion. The fencing will be installed in a manner specific to the exclusion of California red-legged frog. The fence will be installed prior to ground work and will remain until construction activities are complete and restoration activities are beginning.

20. To prevent inadvertent entrapment of the California red-legged frog during construction, any excavated, steep-walled holes or trenches more than 1 foot deep with walls steeper than 30 degrees will be covered at the close of each working day. Alternatively, an additional 4-foot high vertical barrier, independent of exclusionary fences, will be used to further discourage the entrapment of listed species. If it is not feasible to cover an excavation or provide an additional 4-foot high barrier, independent of exclusionary fences, on 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 animal is discovered, the on-site biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape, or the Service will be contacted

by telephone for guidance. The Service must be notified of any such incident within 48 hours. All replacement pipes, culverts, or similar structures stored in the project footprint overnight will be inspected before they are subsequently moved, capped, and/or buried.

21. Plastic mono-filament netting (erosion control matting) or similar material will not be used at the project site because California red-legged frog may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

22. Borrow material will be certified to be nontoxic and weed-free.

23. All food and food-related trash items will be enclosed in sealed trash containers and removed from the site at the end of each day.

24. Pets will be prohibited from the action area.

25. Except when necessary for construction, driver, or pedestrian safety, use of artificial lighting will be minimized to the maximum extent practicable.

26. The potential for adverse effects to water quality will be avoided by implementing temporary and permanent BMPs outlined in Section 13 of the Caltrans Standard Specifications. Caltrans erosion control BMPs will be used to minimize wind- or water-related erosion. The State Water Resources Control Board has issued a National Pollution Discharge Elimination System Statewide Storm Water Permit to Caltrans to regulate stormwater and non-stormwater discharges from Caltrans facilities. A Storm Water Pollution Protection Plan (SWPPP) or Water Pollution Control Program (WPCP) will be developed for the project. The SWPPP /WPCP will comply with the Caltrans Storm Water Management Plan (SWMP). The SW11P includes guidance for Caltrans design staff to incorporate provisions in construction contracts for measures to protect sensitive areas and to prevent and minimize stormwater and non-stormwater discharges.

The SWPPP /WPCP 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 downloaded from the World Wide Web at: http:/ /www.dot.ca.gov /hq/ construe/ stormwater/ manuals.htm.

SWPPP /WPCP measures will include but will not be limited to the following:

a. There will be no discharge of pollutants from vehicle and equipment cleaning into storm drains or water courses;

b. Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from water courses;

c. Concrete wastes will be collected in washouts and water from curing operations will be 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 hydro-mulching 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; and

h. A Revegetation Plan will be prepared for restoration of temporary work areas.

27. Water quality inspector(s) will inspect the site after a rain event to ensure that the stormwater BMPs are adequate.

28. All grindings and asphaltic-concrete waste will be stored within the previously disturbed areas absent of listed species habitat and at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

29. Invasive, exotic plants will be controlled within the action area to the maximum extent practicable, pursuant to Executive Order 13112.

30. Caltrans will provide off-site compensation for the permanent loss of California red-legged frog and Alameda whipsnake habitat at 3:1. Habitat loss will be considered temporary when it will be successfully restored to baseline or better ecological function within 1 year of the initial ground disturbance. Listed species habitat subjected to temporal loss will be compensated at 1:1. Caltrans will provide

in-perpetuity preservation of listed species habitat through one or a combination of the following: (1) purchase of an appropriate conservation easement; or (2) purchase of credits at a Service-approved species mitigation bank. The quantification of the habitat loss and associated compensation is summarized in Table 1.

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Table 1. Habitat Compensation

Species	Temporary habitat loss (acre)		Permanent habitat loss (acre)		Total off-site compensation (acre)
	Amount lost	Compensation @1:1	Amount lost	Compensation @3:1	
California red-legged frog	0.392	0.392	0.0937	0.2811	0.6731
Alameda whipsnake	0.392	0.392	0.0937	0.2811	0.6731

Alameda Whipsnake

The avoidance and minimization measures discussed previously for the California red-legged frog will be implemented for the Alameda whipsnake.

Avoidance measures will be in place to minimize impacts to the Alameda whipsnake. Caltrans proposes to compensate for the permanent loss of 0.0937 acre and the temporary loss of 0.392 acre of Alameda whipsnake habitat through on-site restoration, in-perpetuity preservation of listed species habitat through purchase of mitigation bank credits from an approved U.S. Fish and Wildlife Service bank such as the Ohlone Conservation Bank, establishment of a conservation easement, an in-lieu fee or a combination thereof. Compensation ratios are proposed at a 3:1 ratio for permanent impacts and a 1:1 ratio for temporary impacts to Alameda whipsnake habitat. Credits will be purchased to compensate for a total of 0.6731 acre of impacts. Mitigation bank credits for the Alameda whipsnake will be purchased in conjunction with bank credits for the California red-legged frog.

Migratory Birds

The following measures will be in place to avoid impacts to any potential nesting bird:

1. Preconstruction surveys will be conducted to ensure no nesting birds would be affected if construction is to occur during the nesting season.

2. If nesting birds are identified onsite, the nest site will be identified as an Environmentally Sensitive Area, with a no-work area around the nest tree until it has been determined by a qualified biologist that the young have fledged.

3. A qualified biologist will monitor the active nest during construction activities.

4. A special provision, 14-6.03 BIRD PROTECTION, will be included in the bid package to ensure that no potential migratory birds are affected during construction.

Wildlife Crossing

Caltrans evaluated the movement of listed species for potential effects, and consulted with the Service. The Service did not raise any concerns regarding the movement of listed species during our consultation for this project.

Wildlife crossings and wildlife corridors need to be evaluated within a regional and local context. Based on the purpose and need for this project, the scope is limited to repair of a slope failure and stabilization of the highway. Based on the project purpose and need, wildlife crossings are outside the scope of this project.

HYDROLOGY AND WATER QUALITY (CHECKLIST QUESTION IX.e)

Affected Environment

This discussion is based on the Water Quality Study Report dated February 2014.

The project is within the San Francisco Bay Hydrologic Region, South Bay Hydrologic Unit, East Bay Cities Hydrologic Area and Undefined Hydrologic Sub Area (HSA 204.20). The direct receiving water body within project limits is Lion Creek. Storm water from project area discharges to the South East Bay plain basin.

Environmental Consequences

The total disturbed soil area for the project is less than 1 acre (about 0.3 acre). There will be no additional impervious area from the proposed work.

Potential temporary impacts to existing water quality would result from the staging and active construction areas, which could result in the release of fluids, sediment, and litter beyond the perimeter of the site. Runoff from fresh concrete could affect the pH of receiving waters as well.

Potential long-term impacts to existing water quality are caused by the following pollutants of concern: phosphorus, nitrogen, copper, lead, zinc, sediments, general metals (unspecified metals), and litter. The sources of these pollutants are derived from natural erosion, phosphorus from tree leaves, combustion products from fossil fuels, trash and falling debris from motorists, and the wearing of brake pads.

Avoidance, Minimization, and/or Mitigation Measures

Caltrans must comply with requirements of the Clean Water Act Section 402—National Pollutant Discharge Elimination System (NPDES): Waste Discharge Permit. Caltrans currently has a Statewide NPDES Permit (Order No. 2012-0011-DWQ NPDES No. CAS000003) and a statewide Construction General Permit for construction activities (2009-0009-DWQ, CAS000002, as amended by 2010-0014-DWQ).

In compliance with the NPDES permit, Caltrans developed the Statewide Stormwater Management Plan to address stormwater pollution controls related to highway planning, design, construction, and maintenance activities throughout California. A Water Pollution Control Plan would be required to comply with the Construction General Permit, that applies to all stormwater discharges from land where clearing, grading, and excavation would occur.

Best Management Practices will be incorporated to reduce/prevent the potential discharge of pollutants during and after construction, to the Maximum Extent Practicable. Specific Best Management Practices will be recommended during the subsequent Plans, Specifications, and Estimate phase of the project. Additionally, permanent treatment Best Management Practices will be anticipated for the project as a condition of the Section 401 certification.

Because the project disturbs less than one acre of soil, the contractor must submit a Water Pollution Control Plan to Caltrans for approval. The plan outlines strategies for Temporary Construction Site Best Management Practices.

WETLANDS AND OTHER WATERS (CHECKLIST QUESTION IV.c)

Affected Environment

FIGURE 4: LION CREEK

Lion Creek flows southeasterly into the 72-inch culvert under the highway, while a concrete ditch conveys highway runoff into the creek.

Lion Creek is an intermittent stream that flows through the project site and into San Leandro Bay. It meanders through McCrea Memorial Park and flows under State Route 13 through a 72-inch diameter concrete pipe. Runoff is captured by a 12-inch corrugated metal pipe underneath the road and is conveyed into a concrete v-ditch. This v-ditch empties into the culvert where Lion Creek flows into (see Figure 5). Vegetation within this drainage

feature includes Cape ivy (*Delairea odorata*), Himalayan blackberry (*Rubus armeniacus*), and tall flat sedge (*Cyperus eragrostis*). Although this waterway receives some contamination from an old sulfur mine, when the site was visited, aquatic invertebrates were observed in the waterway, which indicated that this waterway would be suitable for other aquatic species.

Environmental Consequences

The 72-inch diameter reinforced concrete pipe (84-inch outside diameter) will not be disturbed by the proposed project. This culvert is located 25 feet to 30 feet below the shoulder finish grade, and is approximately 240 feet long. The proposed wall would span over the culvert transversely with the soldier piles spaced on the both sides of the pipe, leaving it untouched.

The second culvert is a 12-inch diameter corrugated metal pipe that also crosses underneath the highway. It is 60 feet long, and is located at the northern tip of the proposed wall. It ties into a neighboring inlet on one end and empties into the concrete lined v-ditch below. The corrugated metal pipe is old, and will likely be damaged due to construction of the retaining wall. The corrugated metal pipe will be replaced with an 18-inch diameter corrugated metal pipe. The existing inlet will be capped, and a new inlet will be constructed at the same station, but at the new edge of pavement.

The 18-inch diameter pipe that is proposed to replace the 12-inch diameter pipe would account for 0.0076 acre of temporary impacts to bank habitat.

Avoidance, Minimization, and/or Mitigation Measures

The project will require a 1602 Streambed Alteration Agreement from the California Department of Fish and Wildlife because the project would replace the 12-inch diameter corrugated metal pipe culvert, which may have an indirect effect on the natural flow, bed, channel, or bank of Lion Creek. When an existing wildlife resource, in this case habitat for the California red-legged frog and Alameda whipsnake, may be substantially adversely affected, the California Department of Fish and Wildlife is required to propose reasonable project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications and bid documents for the proposed project.

Since there will be a net gain of 0.001 acre of waters of the U.S. with the installation of a larger corrugated metal pipe, no compensatory mitigation is proposed for the temporary impacts discussed previously. Caltrans BMPs will be implemented to avoid all impacts to jurisdictional waters of the U.S.

GEOLOGY AND SOILS (CHECKLIST QUESTIONS VI.a.i, VI.a.iv, AND VI.c)

Affected Environment

This discussion is based on the Preliminary Foundation Report dated June 19, 2013.

The project is within a seismically active region dominated by the northwest trending San Andreas Fault. This site is within a delineated fault zone according to the Alquist-Priolo Oakland East quadrangle map. It is located in the Oakland Hills, in a shallow valley created by the Hayward fault. The Hayward fault is a right-lateral strike-slip fault that dips 90 degrees relative to the horizontal plane and is considered capable of generating a magnitude 7.3 earthquake.

The soil that is located at the project site is derived from weathered sandstone and shale. Boring tests list the soils at the site as clays, silts, and silty sand overlying shale. Erosion characteristics for this site have not been defined according to the U.S. Department of Agriculture Soil Survey and there are no visible signs of erosion.

Environmental Consequences

Potential seismic hazards in such an active region include primary surface rupture, seismic fault creep, and the secondary effects from strong ground shaking. Secondary seismic hazards include liquefaction and landslides.

The potential for strong ground shaking in the project area during the life of the project is high and will affect both roadways and structures. Loose saturated soils pose the greatest threat during episodes of strong shaking. Liquefaction can occur when unstable soils lose their strength and can move both horizontally and vertically. Liquefaction can cause displacement or buckling of roadway pavement and retaining walls or the settlement of bridge foundations. The project site is located on what is considered to be an active landslide. The retaining wall that is proposed will repair the slide.

Avoidance, Minimization, and/or Mitigation Measures

The proposed project itself will minimize and/or mitigate the effects from seismic hazards. The project will incorporate requirements and recommendations from the preliminary foundation report during design and/or construction. Some design strategies include:

1. Construction of a soldier beam and lagging wall with approximate length of 185 feet and a height of 14 feet with no tieback due to poor backfill soil conditions.

2. Use of soil nails between the soldier piles above the 72-inch diameter storm drain to alleviate stress to the culvert.

3. Installation of soldier beam piles should be spaced 6 feet apart in the drill holes as specified in the plans.

4. The seismic stability of the wall should be checked due to the potential for high ground acceleration.

FIGURE 5: PRELIMINARY PROJECT PLANS

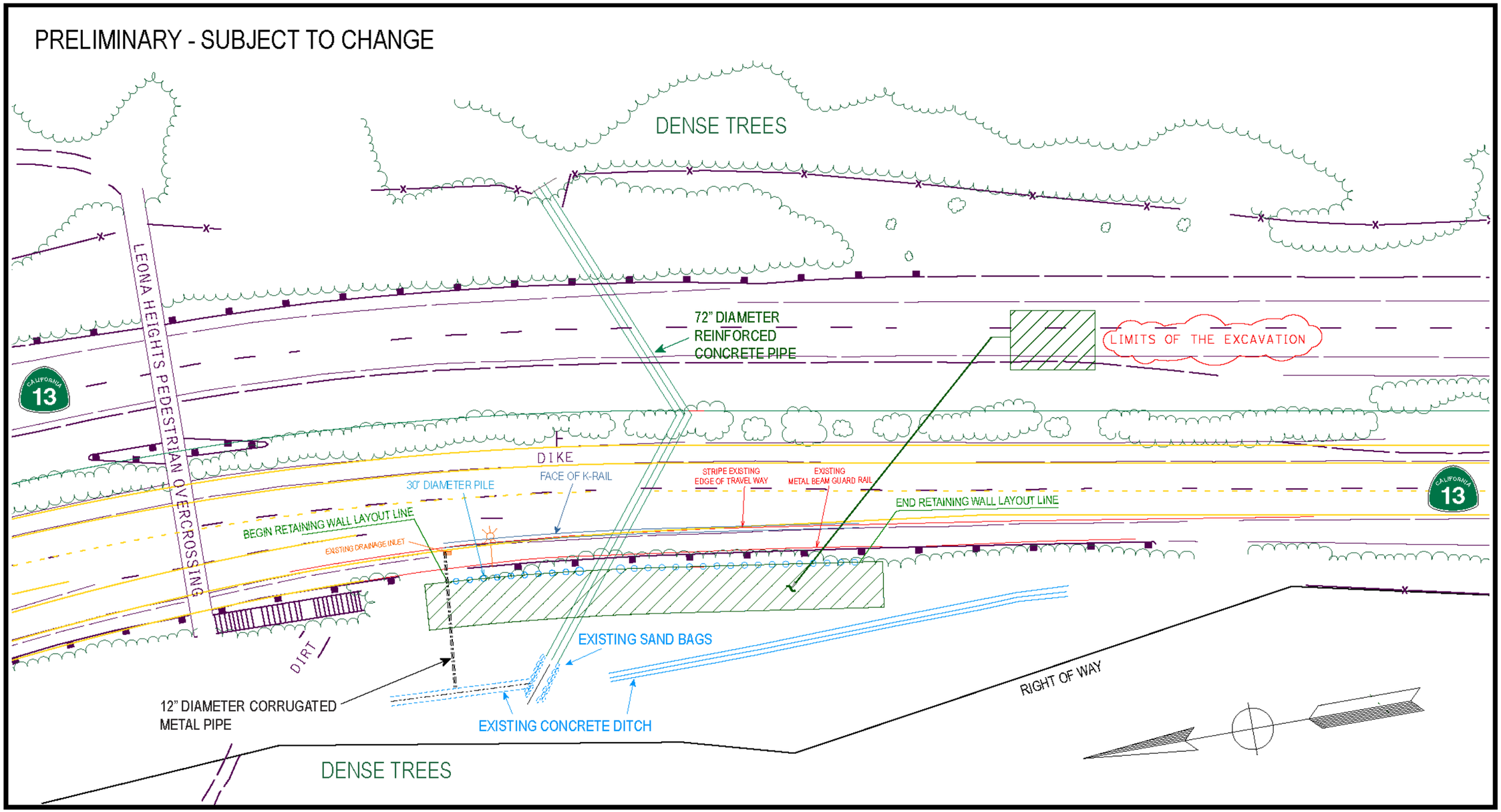
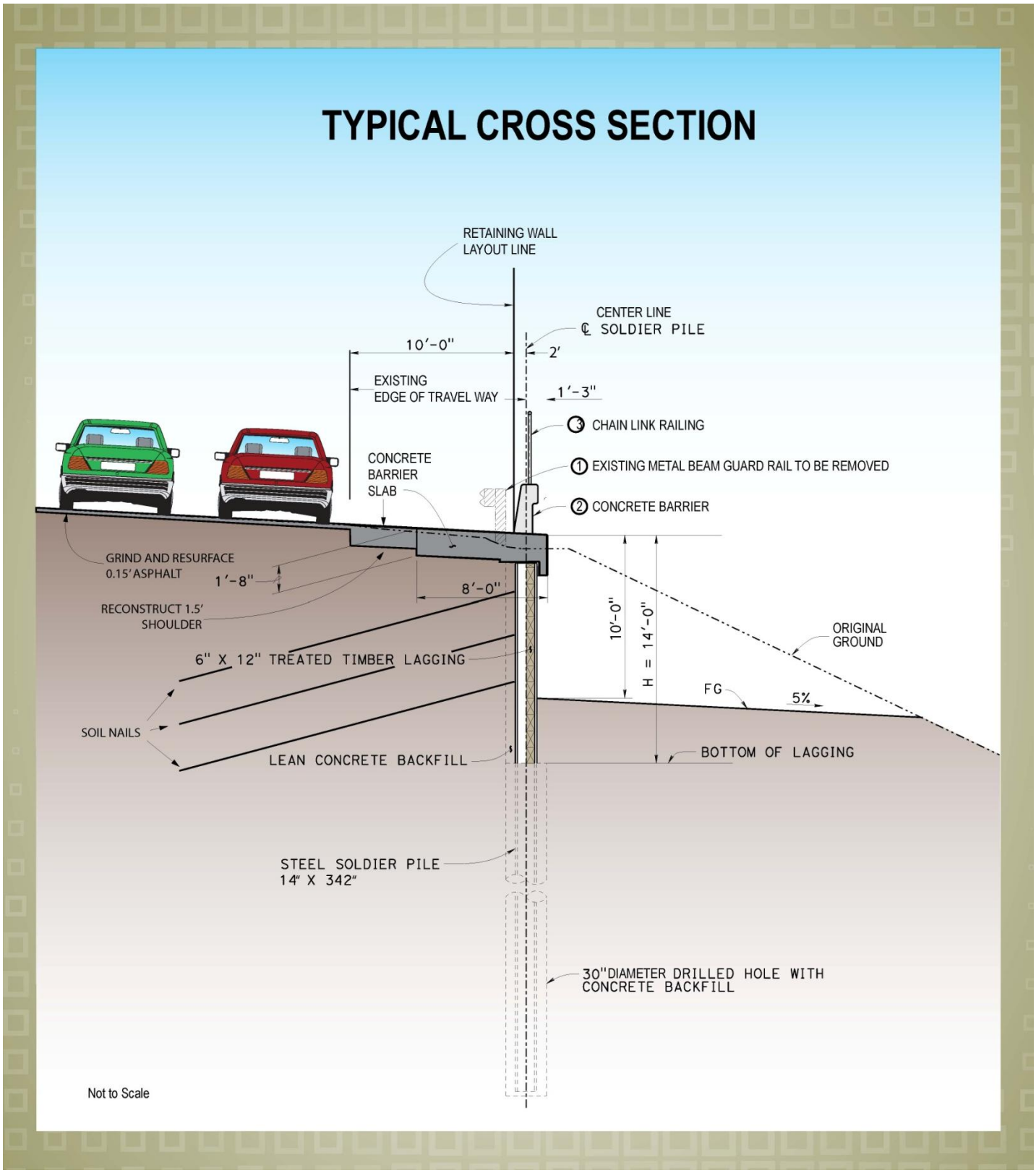


FIGURE 6: TYPICAL CROSS SECTION



Appendix B: Detailed Project Description

Project Purpose

The purpose of this project is to repair cracked pavement in the southbound right shoulder and ramp and to prevent further slippage and settlement of the embankment adjacent to the damaged pavement.

Project Need

The embankment on the west side of State Route 13 has settled and slipped down towards a creek drainage that flows south through McCrea Park and enters a culvert extending east under the freeway. The settlement/slippage is indicated by large cracks in the freeway shoulder in the vicinity of the culvert. The movement is likely caused by winter rain storms that have soaked and destabilized the embankment soil. The cracks and differential settlement have caused a drop of more than 2 inches in elevation in the shoulder pavement, which may cause drivers to over steer. Without the project, the cracking and hazardous condition are expected to worsen, potentially reaching into the southbound lanes of the freeway.

FIGURE 7: DAMAGED ROADWAY Pavement cracks and a damaged metal beam guardrail occur along the southbound shoulder of State Route13.

Project Description

This project is located in Alameda County on southbound State Route 13 south of Leona Heights Pedestrian Overcrossing in the city of Oakland. The project proposes to construct a 186-foot long and 14-foot tall soldier pile retaining wall with soil nails. The wall will consist of 28 cast-in-drilled-hole piles (30 feet long) and 2 cast-in-drilled-hole piles (40 feet long) with timber lagging in between. The longer piles are for the wall segment which will span an existing 72-inch diameter reinforced concrete pipe. A concrete barrier slab with concrete barrier (Type 736) will be placed atop the retaining wall. The metal beam guardrail and asphalt concrete dike located beyond the wall, south of the pedestrian

overcrossing and metal beam guardrail just to the north of the pedestrian overcrossing, will be replaced with a concrete barrier (Type 736B). The combined length of both barrier types would be approximately 406 feet.

Other work would include reconstruction of the outside shoulder, removal of 150' of rolled curb, removal of a light pole and installation of two light poles, installation of a 25-foot long transition railing, and pavement grinding and resurfacing. The existing light pole will be replaced in the same location atop the barrier slab and the second light pole will be placed on a concrete foundation approximately 180 feet north of the first pole. Earthwork would include clearing and grubbing; removal of up to 9 trees; installation of a new pull box, service cabinet, and approximately 50 feet of conduit on the east side of the highway; and reconstruction of the embankment.

Drainage improvements would include the replacement of a 12-inch diameter corrugated metal pipe with an 18-inch diameter corrugated metal pipe and relocation of its drainage inlet.

A potential staging area is located to the south of the proposed retaining wall. Temporary striping would be placed to shift traffic towards the median shoulder during construction.

Appendix C: Permits and Approvals

Agency	Permit/Authority	Purpose
U.S. Fish and Wildlife Service	Endangered Species Act, Section 7—Biological Opinion	A Final Biological Opinion was issued on September 3, 2014 to resolve potential impacts on federally listed species habitat. A Biological Assessment evaluating the project's potential effects to California red-legged frog and Alameda whipsnake was submitted on January 6, 2014 to the U.S. Fish and Wildlife Service.
California Department of Fish and Game	Section 1602 Streambed Agreement	An agreement is required for work within the banks of streams and other water bodies in the state of California.
Central Valley Regional Water Quality Control Board	Clean Water Act Section 402, National Pollutant Discharge Elimination System: Waste Discharge Permit	The Regional Water Quality Control Board requires compliance with (1) the Statewide National Pollutant Discharge Elimination System Permit (Order No. 99-06-DWQ NPDES No. CAS000003) and (2) the General Permit, Waste Discharge Requirements for Discharges of Stormwater Runoff Associated with Construction Activity (Order No. 99-08-DWQ, NPDES No. CAS000002).

Appendix D: U.S. Fish and Wildlife Service Species List

U.S. Fish & Wildlife Service

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and/or U.S.G.S. 7 1/2 Minute Quads you requested

Document Number: 131203120651

Database Last Updated: September 18, 2011

Quad Lists

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Speyeria callippe callippe
callippe silverspot butterfly (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Eucyclogobius newberryi
tidewater goby (E)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central California Coastal steelhead (T) (NMFS)
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana draytonii
California red-legged frog (T)

Reptiles

Masticophis lateralis euryxanthus
Alameda whipsnake [=striped racer] (T)
Critical habitat, Alameda whipsnake (X)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Pelecanus occidentalis californicus
California brown pelican (E)

Rallus longirostris obsoletus

California clapper rail (E)

Sternula antillarum (=Sterna, =albifrons) browni

California least tern (E)

Mammals

Reithrodontomys raviventris

salt marsh harvest mouse (E)

Plants

Arctostaphylos pallida

pallid manzanita (=Alameda or Oakland Hills manzanita) (T)

Chorizanthe robusta var. robusta

robust spineflower (E)

Clarkia franciscana

Presidio clarkia (E)

Quads Containing Listed, Proposed or Candidate Species:

OAKLAND EAST (465C)

County Lists

No county species lists requested.

Key:

(E) *Endangered* - Listed as being in danger of extinction.

(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.

(P) *Proposed* - Officially proposed in the Federal Register for listing as endangered or threatened.

(NMFS) Species under the Jurisdiction of the National Oceanic & Atmospheric Administration Fisheries Service. Consult with them directly about these species.

Critical Habitat - Area essential to the conservation of a species.

(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.

(C) *Candidate* - Candidate to become a proposed species.

(V) Vacated by a court order. Not currently in effect. Being reviewed by the Service.

(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, **or may be affected by** projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Amphibians will be on the list for a quad or county if pesticides applied in that area may be carried to their habitat by air currents.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regardless of whether they appear on a quad list.

Appendix E: U.S. List of Available Technical Studies

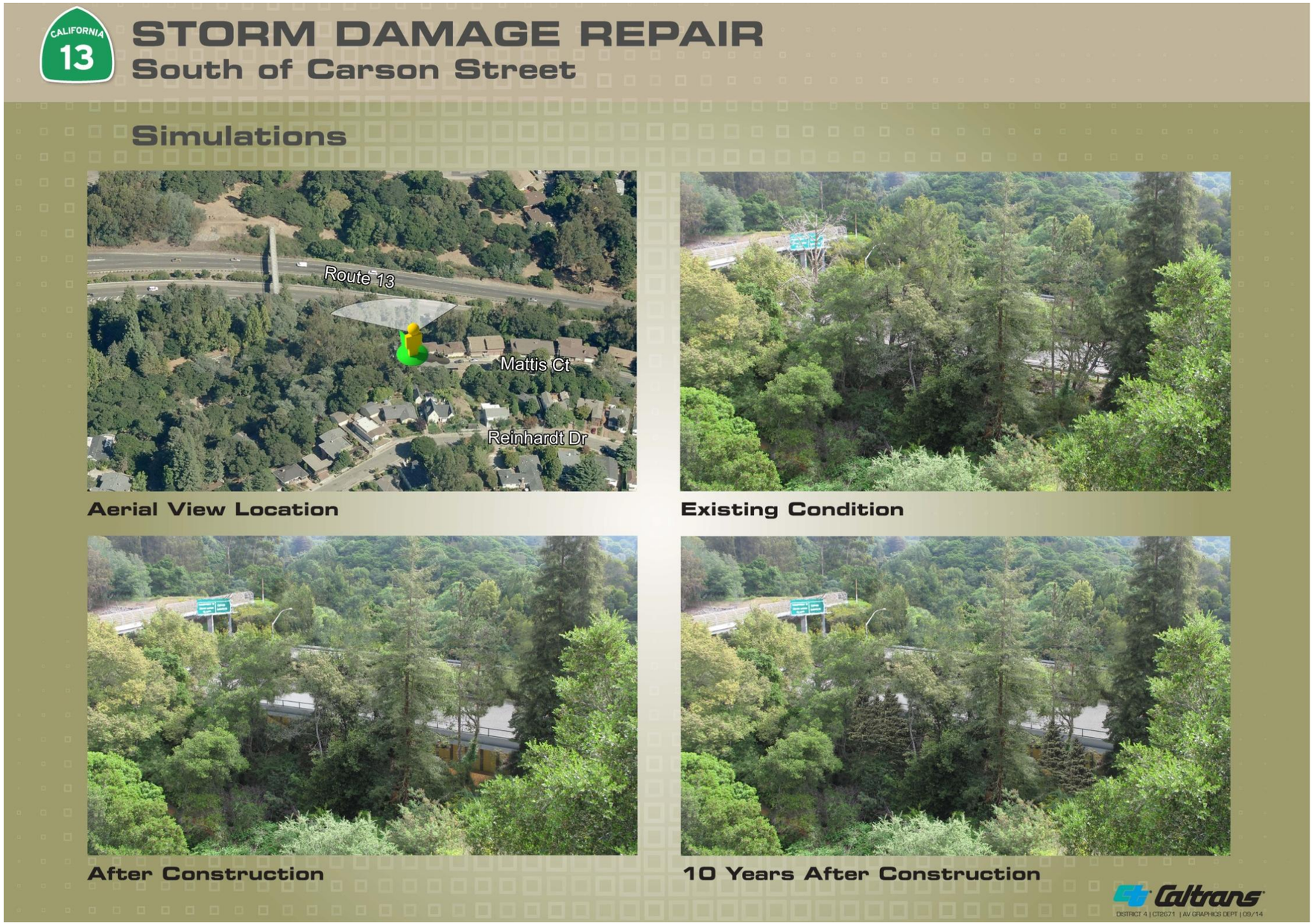
The following studies are available at the Caltrans district office at 111 Grand Avenue, Oakland, CA 94612 and Montclair Branch Library at 1687 Mountain Boulevard, Oakland, CA 94611.

- Air and Noise Quality Compliance Studies, May 14. 2013
- Biological Assessment, January 2014
- Cultural Resources Compliance Memo, February 19, 2014
- Hazardous Waste Memo, May 5, 2013
- Natural Environment Study, April 2014
- Paleontological Identification Report, May 6, 2013
- Preliminary Foundation Report, June 19, 2013
- Visual Impact Assessment, November 26, 2013
- Water Quality Study Report, February 2014

The following technical studies have been removed due to confidentiality:

- Archaeological Survey Report
- Historic Property Survey Report

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.


CALIFORNIA
13
STORM DAMAGE REPAIR
South of Carson Street
Simulations
Route 13
Mattis Ct
Reinhardt Dr
Aerial View Location
Existing Condition
After Construction
10 Years After Construction
Caltrans

Appendix G: Response to Public Comments

This appendix contains the comments received during the public circulation and comment period from June 23rd, 2014 to July 23rd, 2014. Public circulation included hard copies sent to the Montclair Library, copies provided to elected officials who represent the project area, copies to the State Clearinghouse, and posting on the Caltrans District 4 website.

All comments were received electronically at the Caltrans email address provided in the Draft Environmental Document. Caltrans response follows comments presented here. Please refer to the section numbers in the right-hand column for guidance on locating comment-specific responses.

PUBLIC COMMENT LETTERS

Letter from Tommy Chung:

Hello Valerie

I am writing to you regarding this project for "State Route 13 Storm Damage Restoration" and I have a concern and recommendation.

The noise level coming from the freeway is getting worse every year. Both from Hwy 13 and from Hwy 580. We are pounded by the noise of both freeway every day. I recommend that the project be modify not to have a retaining wall with chain link fence but replace it with a sound wall all along Hwy13 and Hwy 580 starting where they split on Hwy580 Westbound. I believe trying to reduce the freeway noise at this corridor will be a big improvement and I will support it.

1
3.a

Thank you.
Tommy

Dear Neighbors,
You may or may not be aware of plans by the California Department of Transportation to add a retaining wall along Highway 13 that spans approximately 2/10 of a mile southward from the Carson St under crossing.

As part of these efforts:
-A concrete barrier with a 3 foot chain link fence on top will be erected
-Pavement will be resurfaced
-Additional lighting will be installed
-Earthwork will be completed to reshape the downslope
-A retaining wall will be installed
-Up to 12 trees and all nearby brush will be removed
-The part of Lions Creek that seasonably flows through this area will be affected
-During the construction period, there will be a long construction equipment "staging and storage" area along Hwy13 that spans most of the length of Mattis Ct.

5.c

These changes raise a number of concerns, including but not limited to:
-CalTrans has not stated if they will replant removed trees with mature trees. A clearer view of the highway will reduce property values, both for the affected properties and for nearby properties (as the former can be used as "comps" for the latter).
-This will be a very loud project.
-CalTrans has not stated how long the project is expected to take or when construction hours will be.

4.a
4.b
1.a
1.b
2.b
2.c

There could theoretically be weeks (or months) of construction noise that could take place at night.
-Destruction of habitat that is hospitable to two protected animal species and five protected plant species.
-There is a risk of hillside liquefaction if an earthquake occurs during the project.

If you did not receive a copy of this proposal, information is available at
-CalTrans Dist. 4 office at 111 Grand Ave, Oakland
-Montclair Branch Library at 1687 Mountain Blvd, Oakland
-http://www.dot.ca.gov/dist4/envdocs.html (look for State Route 13 Storm Damage Restoration)

If you have concerns, questions, or would like a public hearing on these charges, please email Valerie Shearer at valerie.shearer@dot.ca.gov or contact her in writing:

Valerie Shearer, Senior Environmental Planner
CalTrans District 4
111 Grand Ave, MS 8-B, 14th floor
Oakland, CA 94612

5.d

3.b

Letter from Karl Drlica:

Ms. Valerie Shearer
Senior Environmental Planner
Caltrans District 4

Dear Ms. Shearer,

I just learned that Caltrans is planning to carry out construction on Highway 13 south of the Carson Street underpass. I live on Reinhardt Drive, which is the second street up the hill from the planned construction. Our recent experience with what turned out to be a small construction project on Highway 13 creates considerable anxiety about your upcoming plans. If brief, I was awakened in the middle of the night by very loud construction work that for me was of unknown origin. I spent several hours walking around the neighborhood trying to discover whether a home was being demolished by vandals and whether I should get the Oakland Police up here. I did eventually see flashing lights, which signaled to me that road work was taking place in the middle of the night. Better communication with the neighborhood would have gone a long way toward maintaining public support for your agency.

1.d
6
1.a
1.b

I have four issues, the last of which can be fixed easily:
1) going sleepless for many nights is unacceptable. I'm sure that some of the construction can be performed during the day in off-peak hours.
2) the existing trees serve as an important sound barrier for all of Mattis Court and the eastern side of Reinhard Drive. Cutting down large trees will have a long-term negative effect on our ability to live in this neighborhood. At the very least you should plan to replant large, mature trees as a sound barrier.
3) the area you plan to renovate is a wild area that is home to many wild animals. Creating a park will destroy the habitat.
4) there has been almost no communication from Caltrans about this project. This can be corrected by holding a public hearing. Our neighborhood, like many in Oakland, has a very active "listserve" that can be used to notify us about a hearing.

1.c
5.c
3.a

6

I thank you for taking the time to read this long email. I hope we get the opportunity to discuss the construction with you.

Karl Drlica
4600 Reinhardt Dr.
Oakland CA 94616

Letter from June Hill:

Dear Valerie Shearer,

My name is June Hill and I am responding to subject project notification sent on June 20, 2014. I am utilizing this forum to express any concerns prior to July 23rd as stated in the subject letter.

I live directly above the proposed project location. Last night from midnight until 130am 3 large trucks with heavy motors and blinding lights were working on this area. It sounded like workers were dismantling the guard rails along this highway. Drilling, riveting, extractions and clanking noises were heard throughout this time. I assumed workers were prepping the area making ready for implementation of this project. 1.d

My concerns and reason for this email is the noise. There are a lot of homes /citizens above this State highway and a lot of us are getting our best sleep during midnight until 3am /4am or so before we have to get ready for work. 1.b

It would be most appreciated if those concerned with this new project would build their work hours around low traffic times and ensure the communities above this area on both sides are not overly disturbed by shutting down the operations at least by midnight. 1.a

I thank you in advance for your consideration in this matter.

Sincerely,

June Hill
4454 Mattis Court

Letter from Marie Eskandari:

Dear Madam,

As residents of nearby Reinhardt Drive, we are concerned about this project.

How long will it take? Why will there be a chain link fence atop the barrier? Will the mature trees and "brush"be replaced? These issues are but a few of our concerns.

2.b
4.b
5.c

If all the work takes place at night, many nearby residents will suffer great disruption of sleep. We know all about "freeway noise", living between 580 and 13 where all the noise wafts upward. At night, the din generally is limited to "background noise" except for what sounds like gunshots, emergency sirens, occasional car crashes, etc.

1.b

Many in our neighborhood would like to have a hearing on this project that will affect our home lives for an unknown (to us) period.

6.a

Thank you,
Marie & Alex Eskandari
4841 Reinhardt Drive

Letter from Richardine Howard:

Below is the result of your feedback form. It was submitted by HDEANIE@aol.com on July 24th, 2014 at 06:51AM (PDT).

name: Ms.Richardine (Ri Char Di Ne) Howard
email: HDEANIE@aol.com
comment: Attention Valerie Shearer Senior Environmental Planner I have concerns about highway constructions, I live at 4616 Mattis Court, Oak. CA. 94619. With health issues including a severe sleep disorder, I would need to sleep in another location during the construction period, unless the work is during day (9:00 AM-5:00PM) hours. therefore WILL YOU PROVIDE THAT HOUSING?
I HAVE A CONCERN WITH REMOVING TREES. Right now the trees help to filter noise, home for wildlife and or partially shield chemicals that cause Killing of plant life. Something is released in the surrounding property that cause damaging plant life. (spots on leaves and unless removed dead of the plant life.)Which affect organic foods that I try to grow.
I also wonder how this construction will affect the deers, birds, wild life, etc. If possible any trees that have to be removed, be replaced with fruit, and or nut trees. This would help keep the wildlife and not impact the serious sewer problems (tree roots that damage piping) in the City of Oakland. specifically on Mattis Court

1.a
1.b
1.c
4.a

5.d
5.c

Letter from Cynthia Jackson:

Greetings Ms. Shearer,

I am writing to request a hearing on the upcoming Highway 13 CalTrans project slated to occur on the hillside directly below my home. I am a 20-year homeowner and quite concerned about the scope of the project, including the removal of mature trees that support our hill.

No one in our community was given official notice of this project and I speak for my neighbors on the 4600 block of Reinhardt that this project must be halted until we are able to attend a hearing. This project has the potential to seriously degrade the stability of our hill.

Thanks,
Cynthia Jackson
4652 Reinhardt Drive
510-507-3609

6.a
5.c

6.c
3.b

Letter from Melanie O'Halloran:

Greetings Valerie:
Today I am writing to you regarding the proposed State Route 13 Storm Damage Restoration project. I have a number of questions and concerns which I have outlined below. Please let me know if you need any additional information.

- What is the expected duration of this project?
- What are the expected construction hours? 2.b 2.c

Other than the occasional loud motorcycle or emergency vehicle, the noise from Highway 13 is at a relative constant during daylight hours and largely becomes background white noise. From late night to early morning hours (usually around 11pm-5am), Highway 13 is often silent with only an occasional passing vehicle disturbing the quiet.

While we have learned to make peace with having a highway in our backyard, that peace is completely shattered whenever there is any nearby highway construction. Because this section of 13 is essentially in a valley, any noise is echoed off the hills and sounds quite loud in the adjacent homes. When that construction takes place at night (which seems to be the norm), the situation becomes intolerable. My family suffers from broken sleep, poor work and school performance, missed work and school, stress, and health issues whenever nighttime highway work takes place - especially if that work takes place over multiple days. (During the recent guardrail work my family lost multiple nights of sleep, my son had poor school performance, and I missed work due to sheer exhaustion from not being able to sleep all night.) 1.a 1.b

Mitigation proposal: Have all work take place during daytime hours. If any nighttime work must take place, provide notice and reimburse affected residents for relocating during the work period.

- Will the removed trees be replaced with mature trees?
- Will removed brush be replaced? 5.c

From the City of Oakland's view ordinance:
"A. Among the features that contribute to the attractiveness and livability of the city are its trees, both native and introduced, and its views of the San Francisco Bay area, obtained from the variety of elevations found throughout the city. B. Trees, whether growing singly, in clusters, or in woodland situations, produce a wide variety of significant psychological and tangible benefits for both residents and visitors to the city. Trees contribute to the natural environment of the city by modifying temperatures and winds, replenishing oxygen to the atmosphere and water to the soil, controlling soil erosion, and providing wildlife habitat. Trees contribute to the visual environment of the city by providing scale, color, silhouette and mass, and by creating visual screens and buffers to separate land uses, and promote individual privacy. Trees contribute to the economic environment of the city by stabilizing property values and reducing the need for surface drainage systems. Trees contribute to the cultural environment of the city by becoming living landmarks of the city's history and providing a critical element of nature in the midst of urban congestion and settlement."

While the affected trees and vegetation are located on state property, they are enjoyed by the residents who benefit from their beauty and most importantly, the visual screen that obscures the view of the highway. While residents close to Highway 13 already suffer from lower property values due to highway proximity, those of us who are adjacent to the highway would find our property values further diminished if our homes had clearer views of the highway. Simply replanting the removed trees is not sufficient - it is effectively telling residents that they 4.a 4.b 5.c

have to wait 10-20 years to reclaim their previously enjoyed views and property values.

5.d

Despite the close highway proximity, this area serves a home to a variety of wildlife. In my backyard alone I've spotted hawks, songbirds, squirrels, deer, skunks, bats, and wild turkeys. Any changes to the environment should be immediately restored to be as close to the original habitat as possible in order to minimize wildlife disturbances.

5.c

Mitigation proposal: Replant all removed trees with trees with mature trees (or trees of equivalent maturity for any removed immature trees). Replant removed brush to be of equivalent or greater height/density to the removed brush.

- What will the retaining wall and related construction look like?

4.a
4.b

While the project overview with which we were provided gave a description and construction crossview of the project, it is difficult to envision exactly what the final work will look like. The exact scope of the project is also difficult to determine from the blurry, zoomed out maps provided. It is not safe or feasible for residents to walk along the highway shoulder and attempt to take measurements themselves.

Mitigation proposal: Provide artistic renderings of the proposed work along with detailed maps of the permanently affected areas.

- What is the purpose of the chain link fence on top of the concrete barrier?

4.b

It seems that the concrete barrier is taking the place of the guardrail, but the chain link fence does not serve an obvious purpose. Adding a chain link fence is NOT consistent with the aesthetics of the entire area. From most of the views in my home, I cannot see the Leona Heights pedestrian overcrossing so this would be adding a new and unattractive element to my views.

Mitigation proposal: Eliminate the chain link fence. Alternately, plant vines adjacent and encourage them to grow over and cover the fence (this would be a visual improvement over the current views as it would further help obscure the highway).

Thank you,
Melanie O'Halloran

Letter from Ilene Wager:

To: Assemblyman Bonta, Councilmember Libby Schaff, Ms. Shearer

Re: CalTrans Projecy on HWY 13 (near 580)

Ms. Valerie Shearer
Senior Environmental Planner, Caltrans District 4
111 Grand Ave, MS8-B, 14th floor
Oakland, CA 94619

Dear Ms. Shearer,

I just learned that CalTrans is planning to carry out construction on Highway 13 south of the Carson Street underpass. First off, we need a public hearing since no one on Reinhardt has been notified. Reinhardt Drive is the second street up the hill from the planned construction. Many people on Mattis Court, directly above Hwy 13 have not been notified either. 6.a

About 3 weeks ago we were awakened in the middle of the night by very loud construction/demolition work that was of unknown origin. After scouting the neighborhood from12:30-1am we did see flashing lights, which signaled road work was taking place in the middle of the night. Better communication with the neighborhood would have gone a long way toward maintaining public support for your agency, for example in this upcoming project. 1.d 6.b 6.c

I have four main issues:
1) what time of the day will the work be done?. I'm sure that some of the construction can be performed during the day in off-peak hours. 2.c
2) how long will the work last? 2.b
3) the existing trees serve as an important sound and visual barrier for all of Mattis Court and the eastern side of Reinhardt Drive. Cutting down large trees will have a long-term negative effect on this neighborhood. Are you planning to replant large, mature trees as a sound and visual barrier? 1.c 4.a 5.c
3) the area you plan to renovate is a wild area that is home to many wild animals. How are you planning to do work in a way to protect these birds and animals? 5.d
4) as I mentioned before there has been almost no communication from Caltrans about this project. Our neighborhood, like many in Oakland, has a very active "listserve" that can be used to notify us about the hearing, which we need. 6.c

I thank you for your attention to these issues. I hope we get the opportunity to discuss the construction with you soon.

Ilene Wagner, co-facilator of Davenport Neighborhood Watch (DNW)
4600 Reinhardt Dr.
Oakland CA 94616

RESPONSE TO COMMENTS

1. *Noise*

a. General construction noise

The ambient noise levels surrounding the project area are estimated to range from 65 to 80 decibels, depending on the time of day. This estimate takes into account the existing highway traffic.

Construction noise is estimated to range from 74 to 90 decibels. This estimate is based on measured volume levels of individual construction activities and pieces of construction equipment. Not all construction activities will reach the 74 to 90 decibel level.

The contractor will be responsible for complying with all applicable local noise ordinances.

b. Night-time construction noise

Night-time construction will be minimized to the greatest extent feasible and reasonable. Some work will be conducted at night.

It is currently anticipated that grinding and resurfacing of the roadway will be conducted at night. It is necessary to complete this work at night because a complete closure of the roadway is required to complete the work. A complete roadway closure during the higher-traffic daylight hours would present an unreasonable difficulty to the traveling public, and present a greater safety hazard.

The neighborhood will be given prior notice of night work when the work will occur later than 10:00 p.m.

c. Concerns over tree removal

Although it is commonly perceived that trees and other vegetation act as an effective sound barrier, research shows that the actual decibel reduction provided by common vegetation is negligible. Research provided by the Federal Highway Administration states:

> "…for vegetation to provide a substantial, or even noticeable, noise reduction, the vegetation area must be at least 5 m (15 ft) in height, 30 m (100 ft) wide and dense enough to completely obstruct the line-of-sight between the source and the receiver. This size of vegetation area may provide up to 5 dB(A) of noise reduction."

Given this criteria, it is unlikely that any perceptible noise attenuation is being provided by the trees and other vegetation at this location. The proposed tree removal will not be significant enough to disturb any noise attenuation currently being provided.

Further details on noise barriers – including the information quoted above – can be found at:

http://www.fhwa.dot.gov/environment/noise/noise_barriers/design_construction/design/design03.cfm

d. Previous night-time noise

Night-time noise that occurred prior to the circulation of the Draft Environmental Document was not related to this project (State Route 13 Storm Damage Restoration – Carson Street Undercrossing). ***No work or preparation for work has begun on this project.***

The noise reported by residents adjacent to the project area was possibly related to routine maintenance performed by Caltrans, which included brush clearing. This work was performed to maintain highway safety.

For future questions, comments, and concerns, or to request information on Caltrans work, please contact us at 510-286-4444.

2. *Project Schedule*

a. Current project phase

This project is still in an early phase, during which Caltrans completes the necessary environmental review (to comply with NEPA and CEQA). No work or preparations for work have been conducted on the project site.

b. Estimated project schedule/project duration

Construction of the project is scheduled to begin in the Fall of 2015 and conclude in the Fall of 2016. It will take approximately 120 Days (5 months) to complete all project activities, excluding the plant establishment period that will occur after construction is complete.

c. Estimated day-time and night-time work schedule

It is anticipated that day-time work will include drilling of piles for the retaining wall, excavation, construction of the retaining wall, construction of the safety barrier, and shoulder reconstruction.

It is anticipated that night-time work will include grinding and resurfacing of the roadway. This work will require a complete closure of the roadway.

3. *Project Scope*

a. Project purpose and need

The purpose and need of this project, as stated in the Draft Environmental Document (Initial Study with Proposed Mitigated Negative Declaration, circulated June 23rd 2014 to July 23rd 2014) and above, is as follows:

> "The purpose of this project is to repair cracked pavement in the southbound right shoulder and ramp and to prevent further slippage and settlement of the embankment adjacent to the damaged pavement."
>
> "The embankment on the west side of State Route 13 has settled and slipped down towards a creek drainage that flows south through McCrea Park and enters a culvert extending east under the freeway. The settlement/slippage is indicated by large cracks in the freeway shoulder in the vicinity of the culvert. The movement is likely caused by winter rain storms that have soaked and destabilized the embankment soil. The cracks and differential settlement have caused a drop of more than 2 inches in elevation in the shoulder pavement, which may cause drivers to over steer. ***Without the project, the cracking and hazardous condition are expected to worsen, potentially reaching into the southbound lanes of the freeway.***" (Emphasis added)

If the neighborhood would like to pursue soundwalls or any other projects along ALA-13, they may advocate for the desired projects through the General Plan process, and ultimately work to have the desired project added to the regional transportation plan.

These endeavors can be lengthy, because the General Plan and regional transportation plan are complex and have far-reaching effects.

b. Concerns over project impact on the western side of State Route 13 southbound lane (hill of Mattis Court)

The proposed project does not include construction on the hill located on the western side of State Route 13 southbound lane. The construction work is limited to the southbound lane, and will include the construction of a retaining wall and other safety elements at this location.

Tree removal required to construct the retaining wall will be minimal, and will include the removal of trees on the downslope of the roadway embankment (the existing roadway prism, consisting of placed fill). The estimated number of trees to be removed is nine (9).

The removal of these trees will in no way compromise or put at risk the "stability" of the hill on which Mattis Court sits.

The naturally occurring geotechnical conditions of soils in the area predispose them to potential liquefaction during a seismic event. The potential for the adjacent hillside (on which Mattis Court sits) to undergo liquefaction during an earthquake is neither increased nor decreased by this project. The project will help to minimize the potential of seismic hazards at the project location through the installation of a soldier beam and lagging wall.

c. *Requirement for safety barrier (chain link railing)*

Chain link railing has been removed from this project. Per Caltrans Highway Design Manual, chain link railing is not required as there are no pedestrian facilities along the highway, bicyclists are not permitted, and there is no potential for objects to fall on traffic such as for an undercrossing.

4. *Visual*

a. *Tree removal*

Tree removal required to construct the retaining wall will be minimal, and will include the removal of trees on the downslope of the roadway embankment. The estimated number of trees to be removed is nine (9).

The number, size and location of removed trees will not cause homes in the project area to have an unobstructed view of the highway or the Carson Street Pedestrian Overcrossing.

Removed trees will be replaced with species that, at maturity, will create a visual screen similar to that which currently exists on the site.

Simulations of the view from Mattis Court after the project is complete are included in Appendix F.

b. *Project appearance at completion: retaining wall, concrete barrier, and fence*

Retaining Wall:
The exposed portion of the retaining wall will be clad with timber lagging, which consists of horizontal wooden beams, and will be stained or painted a dark color to reduce its visibility.

The wall will not be visible from the roadway.

Concrete Barrier:
The 3' high concrete barrier that will replace the existing metal-beam guard rail will be visible from the roadway.

Chain link railing:
Chain link railing will not be used.

5. *Biological and Vegetation*

a. *Tree removal*

Up to nine (9) trees will be removed in order to construct the retaining wall for this project.

The project will be constructed in a "top-down" method to reduce the total number of trees that will be removed, and avoid removal of as many as possible.

b. Tree protection

Environmentally Sensitive Area fencing will be installed and maintained during construction. This fencing will prevent work from occurring outside the project area, and will ensure that no heavy equipment travels outside of the project area, which could harm adjacent trees through soil compaction.

Special protection measures will be taken to avoid damaging the existing redwood tree in the project area.

c. Replanting plan

Trees will be replaced at a ratio of 6:1, at a minimum.

Young trees will be replanted at 10' (ten feet) on-center, and will consist of a mix of California redwood, toyon, madrone, California bay, valley oak, and coast live oak.

d. Special Status and Threatened and Endangered Species Protection

Caltrans has consulted with U.S. Fish and Wildlife Service (USFWS) about threatened and endangered species for this project. Caltrans has received project approval from USFWS through a Biological Opinion. This document contains project-specific avoidance, minimization, and mitigation measures (AMMs) which project species.

The AMMs provided by USFWS in the Biological Opinion will be incorporated into the construction contract, to ensure they are followed.

Before construction begins, all construction personnel will attend an environmental awareness and education training, provided by a qualified, USFWS-approved biologist. This training educates workers on how to identify threatened and endangered species, handling procedures, and other AMMs.

e. Wildlife Crossing

Caltrans evaluated the movement of listed species for potential effects, and consulted with the Service. The Service did not raise any concerns regarding the movement of listed species during our consultation for this project.

Wildlife crossings and wildlife corridors need to be evaluated within a regional and local context. Based on the purpose and need for this project, the scope is limited to repair of a slope failure and stabilization of the highway. Based on the project purpose and need, wildlife crossings are outside the scope of this project.

6. *Communication and Public Outreach*

a. Request for public meeting

In response to comments received requesting a public meeting, Caltrans held a public information meeting on September 17th, 2014, from 6:00 to 8:00 PM. The meeting took place at the Leona Lodge, 4444 Mountain Boulevard, Oakland CA.

The meeting sought to respond to the community's concerns by providing detailed information about the project.

b. Communication on Caltrans Maintenance

Night-time noise that occurred prior to the circulation of the Draft Environmental Document was not related to this project (State Route 13 Storm Damage Restoration – Carson Street Undercrossing). No work or preparation for work has begun on this project.

The noise reported by residents adjacent to the project area was possibly related to routine maintenance performed by Caltrans, which included brush clearing. This work was performed to maintain highway safety.

For future questions, comments, and concerns, or to request information on Caltrans work, please contact District 4 Public Information at 510-286-4948.

c. Public participation and the Environmental Document Process (CEQA)

Public notification for all Caltrans projects follows the required CEQA process. This process and requirements for public notification are quoted from the Standard Environmental Reference (SER) below:

> "Public participation is considered an essential part of the CEQA process and reflects a belief that citizens can make important contributions to environmental protections and notions of balanced decision-making through wide public involvement. CEQA does not require formal hearings at any stage of the environmental review process for an IS [Initial Study]. However, CEQA does require public notice of the intent to adopt a ND [Negative Declaration] or MND [Mitigated Negative Declaration***]. To comply with CEQA and the CEQA Guidelines, the Department must provide a notice of intent to adopt a negative declaration or mitigated negative declaration to the public, responsible agencies, trustee agencies, and the county clerk of each county within which the proposed project is located, sufficiently prior to adoption by the lead agency of the negative declaration or mitigated negative declaration to allow the public and agencies the 30 day review period.*** The Department must mail a notice of intent to adopt a negative declaration or mitigated negative declaration to the last known name and address of all organizations and individuals who have previously requested such notice in writing and must also give notice of intent to adopt a negative declaration or mitigated negative declaration by at least one of the following procedures to allow the public the 30 day review period:

1. Publication at least one time in a newspaper of general circulation in the area affected by the proposed project. If more than one area is affected, the notice must

be published in the newspaper of largest circulation from among the newspapers of general circulation in those areas.

2. Posting of notice on and off site in the area where the project is to be located.
3. Direct mailing to the owners and occupants of contiguous property shown on the latest equalized assessment roll.

As a matter of Department policy, the Notice of Intent to Adopt an ND or MND must be published in the local paper." (Emphasis added)

Caltrans complied with the above requirements for the proposed project by publishing a notice in the local paper (Montclarion), mailing notices to the abovementioned persons and groups, including contiguous property owners, and making the Initial Study available at our local headquarters, the local library branch, and on our department website.

Appendix H: Biological Opinion

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Suite W-2605
Sacramento, California 95825-1846

In Reply Refer to:
08ESMF00-
2014-F-0364-2

SEP 0 3 2014

Mr. Hardeep Takhar
California Department of Transportation
Environmental Division, MS-8E
111 Grand Avenue
Oakland, California 94612

Subject: Biological Opinion for the State Route 13 Soldier Pile Wall Project, Alameda County, California (Caltrans EA 04-1SS41)

Dear Mr. Takhar:

This Biological Opinion (BO) is in response to your January 6, 2014, request for formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed State Route 13 (SR 13) Soldier Pile Wall Project in Alameda County, California. The California Department of Transportation (Caltrans) letter included a request for formal consultation on the threatened California red-legged frog (*Rana draytonii*) and threatened Alameda whipsnake (*Masticophis lateralis euryxanthus*). The project description portion of the consultation package was considered complete on July 28, 2014, following the Service's review of additional project information provided by Caltrans. There is no designated critical habitat for listed species within the action area of the proposed project. This document represents the Service's biological opinion on the effects of the proposed action on these two listed species and has been prepared in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*)(Act).

Moving Ahead for Progress in the 21st Century Act (MAP-21) was signed into law on July 6, 2012. Effective, October 1, 2012, MAP-21 includes provisions to promote streamlined and accelerated project delivery. Caltrans was approved to participate in the MAP-21 Surface Transportation Project Delivery Program through the National Environmental Policy Act (NEPA) Assignment Memorandum of Understanding (MOU). The MOU allows Caltrans to assume the Federal Highway Administration's (FHWA) responsibilities under NEPA as well as FHWA's consultation and coordination responsibilities under Federal environmental laws for most highway projects in California. Caltrans is exercising this authority as the Federal nexus for section 7 consultation on this project.

This BO is based on: (1) the January 2014, Biological Assessment (BA); (2) the Service's July 24, 2013 visit to the proposed action area; (3) Caltrans' July 28, 2014, response to the Service's July 23, 2014, electronic mail (e-mail) message; (4) Caltrans' August 21, 2014, e-mail message; and (5) other information available to the Service.

Consultation History

May 29, 2013	The Service received an initial e-mail message from Caltrans, introducing the project and requesting technical assistance. The Service responded the same day, agreeing with Caltrans' assessment that formal consultation should be completed for the California red-legged frog and Alameda whipsnake. The Service recommended a site visit be coordinated for further technical assistance.
July 24, 2013	The Service visited the proposed project site with Caltrans. The Service confirmed that formal consultation for the California red-legged frog and Alameda whipsnake was appropriate for the proposed project. The action area includes woodland habitat similar to where the Service has observed the Alameda whipsnake.
January 6, 2014	The Service received Caltrans' January 6, 2014 request for consultation and a January 2014 BA.
July 23, 2014	The Service sent Caltrans' a request for additional project information to complete the consultation package. The request was the equivalent of a 30-day letter and was sent via an e-mail message.
July 28, 2014	The Service received additional project information from Caltrans via an e-mail message. The information was sent in response to the Service's July 23, 2014 request. The provided information was sufficient to complete the consultation package. Caltrans also requested the issuance of a draft BO for review and comment prior to the issuance of a final.
August 14, 2014	The Service issued a draft BO (08ESMF00-2014-F-0364-1).
August 21, 2014	The Service received Caltrans' requested edits to the August 14, 2014, draft BO via an e-mail message.

BIOLOGICAL OPINION

Description of the Action

According to Caltrans, the purpose and need of the proposed project is to stabilize a portion of the southbound SR 13 roadway that is compromised by an unstable embankment. An embankment west of the SR 13 shoulder between highway post miles 4.8 and 5.0, immediately south of the Leona Heights Pedestrian Overcrossing, is sliding towards Lion Creek (aka Leona Creek) below. The slide has resulted in continued subsidence of the SR 13 roadway, causing cracking of the southbound road shoulder asphalt. The asphalt cracking will likely spread into the traveled roadway with continued subsidence.

Caltrans proposes to address the problem area by excavating the unstable embankment and constructing a 180-foot long and 14-foot tall soldier pile retaining wall along the outside edge of the road shoulder. A concrete barrier will be placed along the top of the wall and will extend north ward, replacing 450 feet of existing metal beam guardrail. A 6-foot tall chain-link fence will be

placed on top of the full extent of the concrete barrier. Excavation of the embankment and construction of the retaining wall will involve the removal of up to 12 trees.

The project will also include the replacement of a 12-inch diameter culvert that conveys roadside drainage into concrete drainage system. The existing culvert is located within the loose embankment and its excavation will be completed in conjunction with the excavation for the wall installation. Excavation equipment will operate from the SR 13 road side. The culvert will be replaced with an 18-inch diameter pipe which will outfall through the proposed retaining wall. A second drainage system will likely be installed along the edge of the SR 13 road shoulder. The project does not include modifications to the 72-inch diameter Lion Creek culvert which crosses under SR 13 and outlets in the action area and no work will take place within Lion Creek.

Repair will also include replacement of damaged roadway, removal of the curb, replacing a light post, and adding a second light post. Project staging will likely be located off the south end of the proposed retaining wall.

Construction Schedule
The project is expected to be completed after 120 days of construction. Night work will be limited to activities involving the SR 13 roadway. Wall construction and culvert replacement will be limited to daylight hours. Construction will likely take place between June 2015 and October 15, 2015.

Staging and Access
Staging will be limited to the SR 13 road shoulder. This includes paved shoulder and existing pullouts used by Caltrans maintenance. The use of staging areas will not require ground disturbance or other modifications. The designated staging areas will be clearly marked.

Construction of the retaining wall and culvert replacement will take place from the SR 13 road side and along the embankment. Heavy equipment use will be limited to the roadside. Small equipment and construction personnel will access the embankment by way of a temporary road. This access will be confined to the embankment above the concrete drainage channel.

Equipment
Caltrans anticipates that the proposed activities will require the use of a backhoe, dozer, pavement grinder, paver, trucks for hauling excavated material and imported borrow, flatbed trucks for hauling the steel piles, concrete saw, drill rig, concrete trucks, concrete pump, crane, grout pump, pavement roller, and contractor's vehicles.

Conservation Measures
Caltrans proposes to reduce adverse effects to the California red-legged frog and Alameda whipsnake by implementing the following measures:

1. At least 15 days prior to the onset of any construction-related activities, Caltrans will submit to the Service, for approval, the name(s) and credentials of biologists it wishes to conduct activities specified for this project. Information included in a request for authorization will include, at a minimum: (1) relevant education; (2) relevant training on California red-legged frog and Alameda whipsnake identification, survey techniques, handling individuals of different age classes, and handling of different life stages by a permitted biologist or recognized species expert authorized for such activities by the Service; (3) a summary of field experience conducting requested activities (to include project/research information); (4) a summary of BOs under which they were authorized to work with the Alameda whipsnake

and California red and at what level (such as construction monitoring versus handling); this will also include the names and qualifications of persons under which the work was supervised as well as the amount of work experience on the actual project; (5) A list of Federal Recovery Permits [10(a)l(A)] held or under which are authorized to work with the species (to include permit number, authorized activities, and name of permit holder); (6) any relevant professional references with contact information. No project construction will begin until Caltrans has received written Service approval for biologists to conduct specified activities.

2. Prior to initial ground disturbance, a Service-approved biologist will conduct an education program for all construction personnel. At a minimum, the training will include a description of the California red-legged frog and Alameda whipsnake, migratory birds, and their habitats; the occurrence of these species within the project footprint and action area; an explanation of the status of these species and protection under the Act and Migratory Bird Treaty Act; the measures to be implemented to conserve listed species and their habitats as they relate to the work site; and boundaries within which construction may occur. A fact sheet conveying this information will be prepared and distributed to all construction and project personnel. Upon completion of the training program, personnel will sign a form stating that they attended the program and understand all the avoidance and minimization measures and implications of Act. Sign-in sheets will be kept on file and will be available to the Service upon request.

3. A Service-approved biologist(s) will be onsite during all activities that may result in the take of the California red-legged frog or Alameda whipsnake.

4. No more than 20 working days prior to any ground disturbance, preconstruction Alameda whipsnake and California red-legged frog surveys will be conducted by a Service-approved biologist. The Service-approved biologist(s) will investigate all potential California red-legged frog and Alameda whipsnake cover sites within the action area. This includes thorough investigation of mammal burrows, appropriately sized soil cracks, tree roots, and debris. Non-poisonous native vertebrates found in cover sites within the construction footprint will be documented and relocated to an adequate cover site in the vicinity. The entrances of burrows will be collapsed following investigation in areas that will be subject to ground disturbance.

5. Safety permitting, a Service-approved biological monitor will also investigate areas of disturbed soil for signs of California red-legged frog and Alameda whipsnake within 30 minutes following the initial disturbance of that given area.

6. The Service-approved biologist(s) will permanently remove, from the project site, any exotic wildlife species, such as bullfrogs and crayfish, to the extent possible.

7. The Resident Engineer or his or her designee will be responsible for implementing the conservation measures and *Terms and Conditions* of the BO and will be the point of contact for the project. The Resident Engineer or their designee will maintain a copy of this BO onsite whenever construction is taking place. The person's name and telephone number will be provided to the Service at least 30 calendar days prior to groundbreaking. Prior to groundbreaking, the Resident Engineer will submit a letter to the Service verifying that they possess a copy of the BO and understand the *Terms and Conditions.*

8. The Resident Engineer will stop work at the request of the Service-approved biologist(s) if activities are identified that may result in the take of the California red-legged frog or Alameda whipsnake. Should the biologist(s) or the Resident Engineer exercise this authority, the Service will be notified by telephone and e-mail within one (1) working day. The Service contact will be the Coast-Bay/Forest Foothills Division Chief in the Sacramento Fish and Wildlife Office at (916) 414-6600.

9. If, at any time, a California red-legged frog or Alameda whipsnake is discovered, the Resident Engineer and the biological monitor will be informed immediately. The biological monitor will determine if relocating the animal is necessary and will work with the Service prior to handling or relocating unless otherwise authorized.

10. Construction access, staging, storage, and parking areas will be located within the described project footprint outside of identified sensitive habitat areas or outside of the right-of-way in areas environmentally cleared and permitted. Access routes, staging and storage areas, and contractor parking will be limited to the minimum necessary to construct the proposed project. Routes and boundaries of roadwork will be clearly marked prior to initiating construction or grading.

11. Vegetation that is within the cut-and-fill line or is growing in locations where permanent structures will be placed (for example, road alignment, shoulder widening, and bridge abutments) will be cleared. In areas that will be subject to revegetation, plants will only be cleared where necessary and will be cut above soil level. This will increase the potential of those plants to re-sprout after construction. All clearing and grubbing of woody vegetation will occur by hand or by using construction equipment such as backhoes and excavators, with the exception of trees (which will be removed by chainsaw, as needed). All cleared vegetation will be removed from the project footprint to prevent attracting animals to the project site.

12. A Service-approved biologist will be present during all vegetation clearing and grubbing activities. If a California red-legged frog or Alameda whipsnake is discovered during these activities, the Service-approved biologist, through the Resident Engineer or their designee, will halt all work within 50 feet of the animal and will contact the Service to determine how to proceed.

13. Except for limited vegetation clearing, work within California red-legged frog or Alameda whipsnake habitat will be restricted to between June 1 and October 15.

14. Caltrans will restore temporarily disturbed areas to the preconstruction function and values to the maximum extent practicable. Exposed ground will be reseeded with native grasses and shrubs to stabilize and prevent erosion. Where disturbance includes the removal of trees and woody shrubs, native species will be replanted based on local species composition. Any revegetation plans will be reviewed and approved by the Service. In addition, annual monitoring reports on the success of the plantings will be provided to the Service for review.

15. Nighttime construction will be minimized.

16. Firearms will be prohibited at the project site, except for those carried by authorized security personnel, or local, state or federal law enforcement officials.

17. If requested, before, during, or upon completion of groundbreaking and construction activities, Caltrans will allow access by Service personnel to the action area to inspect project effects. Caltrans requests that all agency representatives contact the Resident Engineer prior to accessing the work site and review and sign the Safe Work Code of Practices, prior to accessing the work site for the first time.

18. Prior to the start of construction, areas containing sensitive habitats adjacent to or within construction work areas for which physical disturbance is not allowed will be clearly delineated using high-visibility orange fencing. The fencing will remain in place throughout the duration of the project and will prevent construction equipment or personnel from entering sensitive habitat areas. The final project plans will depict all locations where fencing will be installed and how it will be installed. The special provisions in the bid solicitation package will clearly describe acceptable fencing material and prohibited construction-related activities, vehicle operation, material and equipment storage, and other surface-disturbing activities within the sensitive areas.

19. California red-legged frog and Alameda whipsnake exclusionary fencing will be placed at the edge of active construction areas to restrict snake and frog access into the work area. The fencing will consist of heavy and rigid polymer matrix designed for small vertebrate exclusion. The fencing will be installed in a manner specific to the exclusion of the California red-legged frog and Alameda whipsnake. The fence will be installed prior to ground work and will remain until construction activities are complete and restoration activities are beginning.

20. To prevent inadvertent entrapment of listed 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 discourage the 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 animal is discovered, the on-site biologist will immediately place escape ramps or other appropriate structures to allow the animal to escape or the Service will be contacted by telephone for guidance. The Service will be notified of the incident by telephone and electronic mail within 48 hours.

21. Plastic mono-filament netting (erosion control matting) or similar material will not be used at the project site because California red-legged frogs and Alameda whipsnakes may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackified hydroseeding compounds.

22. Borrow material will be certified to be nontoxic and weed-free.

23. All food and food-related trash items will be enclosed in sealed trash containers and removed from the site at the end of each day.

24. Pets will be prohibited from the action area.

25. Except when necessary for construction, driver, or pedestrian safety, use of artificial lighting will be minimized to the maximum extent practicable.

26. 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 wind- or water-related erosion. The State Water Resources Control Board has issued a National Pollution Discharge Elimination System Statewide Storm Water Permit to Caltrans to regulate stormwater and non-stormwater discharges from Caltrans facilities. A Storm Water Pollution Protection Plan (SWPPP) or Water Pollution Control Program (WPCP) will be developed for the project. The SWPPP/WPCP will comply with the Caltrans Storm Water Management Plan (SWMP). The SWMP includes guidance for Caltrans design staff to incorporate provisions in construction contracts for measures to protect sensitive areas and to prevent and minimize stormwater and non-stormwater discharges.

    The SWPPP/WPCP 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 downloaded from the World Wide Web at: http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm.

    SWPPP/WPCP measures will include but will not be limited to the following:

    a. There will be no discharge of pollutants from vehicle and equipment cleaning into storm drains or water courses;

    b. Vehicle and equipment fueling and maintenance operations will be at least 50 feet away from water courses;

    c. Concrete wastes will be collected in washouts and water from curing operations will be 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 hydro-mulching 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; and

    h. A Revegetation Plan will be prepared for restoration of temporary work areas.

27. Water quality inspector(s) will inspect the site after a rain event to ensure that the stormwater BMPs are adequate.

28. All grindings and asphaltic-concrete waste will be stored within previously disturbed areas absent of listed species habitat and at a minimum of 50 feet from any aquatic habitat, culvert, or drainage feature.

29. All areas that are temporarily affected during construction will be revegetated with an assemblage of native grass, shrub, and tree species. Invasive, exotic plants will be controlled within the action area to the maximum extent practicable, pursuant to Executive Order 13112.

30. Caltrans will provide off-site compensation for the permanent loss of California red-legged frog and Alameda whipsnake habitat at 3:1. Habitat loss will be considered temporary when it will be successfully restored to baseline or better ecological function within 1 year of the initial ground disturbance. Listed species habitat subjected to temporal loss will be compensated at 1:1. Caltrans will provide in-perpetuity preservation of listed species habitat through one or a combination of the following: (1) purchase of an appropriate conservation easement; or (2) purchase of credits at a Service-approved species mitigation bank. The quantification of the habitat loss and associated compensation is summarized in Table 1.

Table 1. Habitat Compensation.

Species	Temporary habitat loss (acre)		Permanent habitat loss (acre)		Total off-site compensation (acre)
	Amount lost	Compensation @ 1:1	Amount lost	Compensation @ 3:1	
California red-legged frog	0.392	0.392	0.0937	0.2811	0.6731
Alameda whipsnake	0.392	0.392	0.0937	0.2811	0.6731

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the purposes of the effects assessment, the action area encompasses the construction footprint that will be affected by ground disturbance and a 300-foot buffer area which will be affected by noise and visual disturbance. The project will include the loss of 0.4857 acre of natural habitat. As presented in Table 1, the loss includes 0.392 acre of temporal and 0.0937 acre of permanent habitat loss.

Analytical Framework for the Jeopardy Determination

In accordance with policy and regulation, the jeopardy analysis in this BO relies on four components: (1) the *Status of the Species*, which evaluates the California red-legged frog and Alameda whipsnake range-wide conditions, the factors responsible for those conditions, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition of these two listed species in the action area, the factors responsible for those conditions, and the relationship of the action area to the survival and recovery of the listed species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the California red-legged frog and Alameda whipsnake; and (4) *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area on these two listed species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed Federal action in the context of the California red-legged frog and Alameda whipsnake current status, taking into account any cumulative effects, to determine if implementation of the action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

The jeopardy analysis in this BO places an emphasis on consideration of the range-wide survival and recovery needs of the California red-legged frog and Alameda whipsnake and the role of the action area in the survival and recovery of these two listed species as the context for evaluating the significance of the effects of the proposed Federal action, taken together with cumulative effects, for purposes of making the jeopardy determination.

Status of the Species

California Red-Legged Frog

Listing Status

The California red-legged frog was listed as a threatened species on May 23, 1996 (Service 1996). Critical habitat was re-designated for this species on March 17, 2010 (Service 2010). A recovery plan was published for the California red-legged frog on September 12, 2002 (Service 2002).

Description

The California red-legged frog is the largest native frog in the western United States (Wright and Wright 1949), ranging from 1.5 to 5.1 inches in length (Stebbins 2003). The abdomen and hind legs of adults are largely red, while the back is characterized by small black flecks and larger irregular dark blotches with indistinct outlines on a brown, gray, olive, or reddish background. Dorsal spots usually have light centers (Stebbins 2003), and dorsolateral folds are prominent on the back. California red-legged frogs have paired vocal sacs and vocalize in air (Hayes and Krempels 1986). Larvae (tadpoles) range from 0.6 to 3.1 inches in length, and the background color of the body is dark brown and yellow with darker spots (Storer 1925).

Distribution

The historic range of the red-legged frog extended coastally from the vicinity of Elk Creek in Mendocino County, California, and inland from the vicinity of Redding, Shasta County, California, southward to northwestern Baja California, Mexico (Jennings and Hayes 1985; Hayes and Krempels 1986; Fellers 2005). The red-legged frog was historically documented in 46 California counties but the taxon now remains in 238 streams or drainages within 23 counties, representing a loss of 70 percent of its former range (Service 2002). California red-legged frogs are still locally abundant within portions of the San Francisco Bay area and the Central Coast. Within the remaining distribution of the species, only isolated populations have been documented in the Sierra Nevada, northern Coast Range, northern Transverse Ranges, southern Transverse Ranges, and Peninsular Ranges.

Status and Natural History

California red-legged frogs predominately inhabit permanent water sources such as streams, lakes, marshes, natural and man-made ponds, and ephemeral drainages in valley bottoms and foothills up to 4,921 feet in elevation (Jennings and Hayes 1994, Bulger *et al.* 2003, Stebbins 2003). However, California red-legged frogs also have been found in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. California red-legged frogs also can be found in disturbed areas such as channelized creeks and drainage ditches in urban and agricultural areas. For example, an adult California red-legged frog was observed in a shallow isolated pool on North

Slough Creek in the American Canyon area of Napa County (C. Gaber, PG&E, pers. comm., 2008). This frog location was surrounded by vineyard development. Another adult California red-legged frog was observed under debris in an unpaved parking lot in a heavily industrial area of Burlingame (P. Kobernus, Coast Ridge Ecology, pers. comm., 2008). This frog was likely utilizing a nearby drainage ditch. Caltrans also has discovered California red-legged frog adults, tadpoles, and egg masses within a storm drainage system within a major cloverleaf intersection of Millbrae Avenue and SR 101 in a heavily developed area of San Mateo County (Caltrans 2007). California red-legged frog has the potential to persist in disturbed areas as long as those locations provide at least one or more of their life history requirements.

California red-legged frogs typically breed between November and April in still or slow-moving water at least 2.5 feet in depth with emergent vegetation, such as cattails, tules or overhanging willows (Hayes and Jennings 1988). There are earlier breeding records from the southern portion of their range (Storer 1925). Female frogs deposit egg masses on emergent vegetation so that the egg mass floats on or near the surface of the water (Hayes and Miyamoto 1984). Individuals occurring in coastal areas are active year-round (Jennings *et al.* 1992), whereas those found in interior sites are normally less active during the cold and dry seasons.

During other parts of the year, habitat includes nearly any area within 1-2 miles of a breeding site that stays moist and cool through the summer (Fellers 2005). According to Fellers (2005), this can include vegetated areas with coyote brush, California blackberry thickets, and root masses associated with willow and California bay trees. Sometimes the non-breeding habitat used by California red-legged frogs is extremely limited in size. For example, non-breeding California red-legged frogs have been found in a 6-foot wide coyote brush thicket growing along a small intermittent creek surrounded by heavily grazed grassland (Fellers 2005). Sheltering habitat for California red-legged frogs is potentially all aquatic, riparian, and upland areas within the range of the species and includes any landscape features that provide cover, such as existing animal burrows, boulders or rocks, organic debris such as downed trees or logs, and industrial debris. Agricultural features such as drains, watering troughs, spring boxes, abandoned structures, or hay stacks may also be used. Incised stream channels with portions narrower and depths greater than 18 inches also may provide important summer sheltering habitat. Accessibility to sheltering habitat is essential for the survival of California red-legged frogs within a watershed, and can be a factor limiting frog population numbers and survival.

California red-legged frogs do not have a distinct breeding migration (Fellers 2005). Adult frogs are often associated with permanent bodies of water. Some frogs remain at breeding sites all year while others disperse. Dispersal distances are typically less than 0.5 mile, with other individuals moving up to 1-2 miles (Fellers 2005). Movements are typically along riparian corridors, but some individuals, especially on rainy nights, move directly from one site to another through normally inhospitable habitats, such as heavily grazed pastures or oak-grassland savannas (Fellers 2005).

In a study of California red-legged frog terrestrial activity in a mesic area of the Santa Cruz Mountains, Bulger *et al.* (2003) categorized terrestrial use as migratory and non-migratory. The latter occurred over one to several days and was associated with precipitation events. Migratory movements were characterized as the movement between aquatic sites and were most often associated with breeding activities. Bulger *et al.* (2003) reported that non-migrating frogs typically stayed within 200 feet of aquatic habitat 90 percent of the time and were most often associated with dense vegetative cover, *i.e.* California blackberry, poison oak and coyote brush. Dispersing frogs in northern Santa Cruz County traveled distances from 0.25-mile to more than 2 miles without apparent regard to topography, vegetation type, or riparian corridors (Bulger *et al.* 2003).

In a study of California red-legged frog terrestrial activity in a xeric environment, Tatarian (2008) noted that 57 percent of frogs fitted with radio transmitters in the Round Valley study area in eastern Contra Costa County stayed at their breeding pools, whereas 43 percent moved into adjacent upland habitat or to other aquatic sites. This study reported a peak of seasonal terrestrial movement occurring in the fall months, with movement commencing with the first 0.2 inch of precipitation. Movements away from the source pools tapered off into spring. Upland movement activities ranged from 3 to 233 feet, averaging 80 feet, and were associated with a variety of refugia including grass thatch, crevices, cow hoof prints, ground squirrel burrows at the bases of trees or rocks, logs, and a downed barn door; others were associated with upland sites lacking refugia (Tatarian 2008). The majority of terrestrial movements lasted from 1-4 days; however, an adult female was reported to remain in upland habitat for 50 days (Tatarian 2008). Uplands closer to aquatic sites were used more often and frog refugia were more commonly associated with areas exhibiting higher object cover (*e.g.*, woody debris, rocks, and vegetative cover). Subterranean cover was not significantly different between occupied upland habitat and non-occupied upland habitat.

California red-legged frogs are often prolific breeders, laying their eggs during or shortly after large rainfall events in late winter and early spring (Hayes and Miyamoto 1984). Egg masses containing 2,000-5,000 eggs are attached to vegetation below the surface and hatch after 6-14 days (Storer 1925, Jennings and Hayes 1994). In coastal lagoons, the most significant mortality factor in the pre-hatching stage is water salinity (Jennings *et al.* 1992). Eggs exposed to salinity levels greater than 4.5 parts per thousand results in 100 percent mortality (Jennings and Hayes 1990). Increased siltation during the breeding season can cause asphyxiation of eggs and small larvae. Larvae undergo metamorphosis 3.5-7 months following hatching and reach sexual maturity at 2-3 years of age (Storer 1925; Wright and Wright 1949; Jennings and Hayes 1985, 1990, 1994). Of the various life stages, larvae probably experience the highest mortality rates, with less than 1 percent of eggs laid reaching metamorphosis (Jennings *et al.* 1992). Sexual maturity normally is reached at 3-4 years of age (Storer 1925; Jennings and Hayes 1985). California red-legged frogs may live 8-10 years (Jennings *et al.* 1992). Populations of California red-legged frogs fluctuate from year to year. When conditions are favorable California red-legged frogs can experience extremely high rates of reproduction and thus produce large numbers of dispersing young and a concomitant increase in the number of occupied sites. In contrast, California red-legged frogs may temporarily disappear from an area when conditions are stressful (*e.g.*, drought).

California red-legged frogs have a diverse diet which changes as they mature. The diet of larval California red-legged frogs is not well studied, but is likely similar to that of other ranid frogs, which feed on algae, diatoms, and detritus by grazing on the surfaces of rocks and vegetation (Fellers 2005; Kupferberg 1996a, 1996b, 1997). Hayes and Tennant (1985) analyzed the diets of California red-legged frogs from Cañada de la Gaviota in Santa Barbara County during the winter of 1981 and found invertebrates (comprising 42 taxa) to be the most common prey item consumed; however, they speculated that this was opportunistic and varied based on prey availability. They ascertained that larger frogs consumed larger prey and were recorded to have preyed on Pacific tree frogs, three-spined stickleback and to a limited extent, California mice, which were abundant at the study site (Hayes and Tennant 1985, Fellers 2005). Although larger vertebrate prey was consumed less frequently, it represented over half of the prey mass eaten by larger frogs suggesting that such prey may play an energetically important role in their diets (Hayes and Tennant 1985). Juvenile and subadult/adult frogs varied in their feeding activity periods; juveniles fed for longer periods throughout the day and night, while subadult/adults fed nocturnally (Hayes and Tennant 1985). Juveniles were significantly less successful at capturing prey and all life history stages exhibited poor prey discrimination; feeding on several inanimate objects that moved through their field of view (Hayes and Tennant 1985).

Metapopulation and Patch Dynamics

The direction and type of habitat used by dispersing animals is especially important in fragmented environments (Forys and Humphrey 1996). Models of habitat patch geometry predict that individual animals will exit patches at more "permeable" areas (Buechner 1987; Stamps *et al.* 1987). A landscape corridor may increase the patch-edge permeability by extending patch habitat (La Polla and Barrett 1993), and allow individuals to move from one patch to another. The geometric and habitat features that constitute a "corridor" must be determined from the perspective of the animal (Forys and Humphrey 1996).

Because their habitats have been fragmented, many endangered and threatened species exist as metapopulations (Verboom and Apeldom 1990; Verboom *et al.* 1991). A metapopulation is a collection of spatially discrete subpopulations that are connected by the dispersal movements of the individuals (Levins 1970; Hanski 1991). For metapopulations of listed species, a prerequisite to recovery is determining if unoccupied habitat patches are vacant due to the attributes of the habitat patch (food, cover, and patch area) or due to patch context (distance of the patch to other patches and distance of the patch to other features). Subpopulations of patches with higher quality food and cover are more likely to persist because they can support more individuals. Large populations have less of a chance of extinction due to stochastic events (Gilpin and Soule 1986). Similarly, small patches will support fewer individuals, increasing the rate of extinction. Patches that are near occupied patches are more likely to be recolonized when local extinction occurs and may benefit from emigration of individuals via the "rescue" effect (Hanski 1982; Fahrig and Merriam 1985; Gotelli 1991; Holt 1993). For the metapopulation to persist, the rate of patches being colonized must exceed the rate of patches going extinct (Levins 1970). If some subpopulations go extinct regardless of patch context, recovery actions should be placed on patch attributes. Patches could be managed to increase the availability of food and/or cover.

Movements and dispersal corridors likely are critical to California red-legged frog population dynamics, particularly because the animals likely currently persist as metapopulations with disjunct population centers. Movement and dispersal corridors are important for alleviating over-crowding and intraspecific competition, and also they are important for facilitating the recolonization of areas where the animal has been extirpated. Movement between population centers maintains gene flow and reduced genetic isolation. Genetically isolated populations are at greater risk of deleterious genetic effects such as inbreeding, genetic drift, and founder effects. The survival of wildlife species in fragmented habitats may ultimately depend on their ability to move among patches to access necessary resources, retain genetic diversity, and maintain reproductive capacity within populations (Petit *et al.* 1995; Buza *et al.* 2000; Hilty and Merenlender 2004).

Most metapopulation or metapopulation-like models of patchy populations do not directly include the effects of dispersal mortality on population dynamics (Hanski 1994; With and Crist 1995; Lindenmayer and Possingham 1996). Based on these models, it has become a widely held notion that more vagile species have a higher tolerance to habitat loss and fragmentation than less vagile species. But models that include dispersal mortality predict the opposite: more vagile species should be more vulnerable to habitat loss and fragmentation because they are more susceptible to dispersal mortality (Fahrig 1998; Casagrandi and Gatto 1999). This prediction is supported by Gibbs (1998), who examined the presence-absence of five amphibian species across a gradient of habitat loss. He found that species with low dispersal rates are better able than more vagile species to persist in landscapes with low habitat cover. Gibbs (1998) postulated that the land between habitats serves as a demographic "drain" for many amphibians. Furthermore, Bonnet *et al.* (1999) found that snake species that use frequent long-distance movements have higher mortality rates than do sedentary species.

Threats

Habitat loss, non-native species introduction, and urban encroachment are the primary factors that have adversely affected the red-legged frog throughout its range. Several researchers in central California have noted the decline and eventual local disappearance of California and northern California red-legged frogs (*Rana aurora*) in systems supporting bullfrogs (Jennings and Hayes 1990; Twedt 1993), red swamp crayfish, signal crayfish, and several species of warm water fish including sunfish, goldfish, common carp, and mosquitofish (Moyle 1976, Barry 1992, Hunt 1993, Fisher and Schaffer 1996). This has been attributed to predation, competition, and reproduction interference. Twedt (1993) documented bullfrog predation of juvenile northern California red-legged frogs, and suggested that bullfrogs could prey on subadult northern California red-legged frogs as well. Bullfrogs may also have a competitive advantage over California red-legged frogs. For instance, bullfrogs are larger and possess more generalized food habits (Bury and Whelan 1984). In addition, bullfrogs have an extended breeding season (Storer 1933) during which an individual female can produce as many as 20,000 eggs (Emlen 1977). Furthermore, bullfrog larvae are unpalatable to predatory fish (Kruse and Francis 1977). Bullfrogs also interfere with red-legged frog reproduction. Thus bullfrogs are able to prey upon and out-compete California red-legged frogs, especially in sub-optimal habitat. Both California and northern California red-legged frogs have also been observed in amplexus (mounted on) with both male and female bullfrogs (Jennings and Hayes 1990; Jennings 1993; Twedt 1993).

The urbanization of land within and adjacent to red-legged frog habitat has also adversely affected California red-legged frogs. These declines are attributed to channelization of riparian areas, enclosure of the channels by urban development that blocks red-legged frog dispersal, and the introduction of predatory fishes and bullfrogs.

Diseases may also pose a significant threat though the specific effects of diseases on the California red-legged frog are not known. Pathogens are suspected of causing global amphibian declines (Davidson *et al.* 2003). Chytridiomycosis and ranaviruses are a potential threat to the red-legged frog because these diseases have been found to adversely affect other amphibians, including the listed species (Davidson *et al.* 2003; Lips *et al.* 2003). Non-native species, such as bullfrogs and non-native tiger salamanders that live within the range of the California red-legged frog have been identified as potential carriers of these diseases (Garner *et al.* 2005). Human activities can facilitate the spread of disease by encouraging the further introduction of non-native carriers and by acting as carriers themselves (*i.e.*, contaminated boots or fishing equipment). Human activities can also introduce stress by other means, such as habitat fragmentation, that results in the listed species being more susceptible to the effects of disease. Disease will likely become a growing threat because of the relatively small and fragmented remaining California red-legged frog breeding sites, the many stresses on these sites due to habitat losses and alterations, and the many other potential disease-enhancing anthropogenic changes that have occurred both inside and outside the species' range.

Negative effects to wildlife populations from roads and pavement may extend some distance from the actual road. The phenomenon can result from any of the effects already described in this BO, such as vehicle-related mortality, habitat degradation, and invasive exotic species. Forman and Deblinger (1998, 2000) described the area affected as the "road effect" zone. Along a 4-lane road in Massachusetts, they determined that this zone extend for an average of approximately 980 feet to either side of the road for an average total zone width of approximately 1,970 feet. They describe the boundaries of this zone as asymmetric and in some areas diminished wildlife use attributed to road effects was detected greater than 0.6 mile from Massachusetts Route 2. The "road-zone" effect can also be subtle. Van der Zande *et al.* (1980) reported that lapwings and black-tailed godwits feeding at 1,575-6,560 feet from roads were disturbed by passing vehicles. The heart rate, metabolic

rate and energy expenditure of female bighorn sheep increase near roads (MacArthur *et al.* 1979). Trombulak and Frissell (2000) described another type of "road-zone' effect due to contaminants. Heavy metal concentrations from vehicle exhaust were greatest within 66 feet of roads, but elevated levels of metals in both soil and plants were detected at 660 feet of roads. The "road-zone" apparently varies with habitat type and traffic volume. Based on responses by birds, Forman (2000) estimated the effect zone along primary roads of 1,000 feet in woodlands, 1,197 feet in grasslands, and 2,657 feet in natural lands near urban areas. Along secondary roads with lower traffic volumes, the effect zone was 656 feet. The "road-zone" effect with regard to California red-legged frogs has not been adequately investigated.

The necessity of moving between multiple habitats and breeding ponds means that many amphibian species, such as the California red-legged frog, are especially vulnerable to roads and well-used large paved areas in the landscape. Van Gelder (1973) and Cooke (1995) have examined the effect of roads on amphibians and found that because of their activity patterns, population structure, and preferred habitats, aquatic breeding amphibians are more vulnerable to traffic mortality than some other species. Large, high-volume highways pose a nearly impenetrable barrier to amphibians and result in mortality to individual animals as well as significantly fragmenting habitat. Hels and Buchwald (2001) found that mortality rates for anurans on high traffic roads are higher than on low traffic roads. Vos and Chardon (1998) found a significant negative effect of road density on the occupation probability of ponds by the moor frog (*Rana arvalis*) in the Netherlands. In addition, incidents of very large numbers of road-killed frogs are well documented (*e.g.*, Ashley and Robinson 1996), and studies have shown strong population level effects of traffic density (Carr and Fahrig 2001) and high traffic roads on these amphibians (Van Gelder 1973; Vos and Chardon 1998). Most studies regularly count road kills from slow moving vehicles (Hansen 1982; Rosen and Lowe 1994; Drews 1995; Mallick *et al.* 1998) or by foot (Munguira and Thomas 1992). These studies assume that every victim is observed, which may be true for large conspicuous mammals, but it certainly is not true for small animals, such as the California red-legged frog. Amphibians appear especially vulnerable to traffic mortality because they readily attempt to cross roads, are slow-moving and small, and thus cannot easily be avoided by drivers (Carr and Fahrig 2001).

Alameda Whipsnake

Refer to the Alameda Whipsnake 5-Year Review: Summary and Evaluation (Service 2011) for the snake's status and life history information. This document can be downloaded from the World Wide Web at: http://ecos.fws.gov/docs/five_year_review/doc3886.pdf.

Environmental Baseline in the Action Area

The action area is located within a noticeable transition between urban development and open space habitat within the City of Oakland. SR 13 is an approximate division between a heavily urbanized area west to the San Francisco Bay and the more open and topographically varied Oakland Hills to the east. SR 13 is a 4-lane divided highway which experiences heavy and consistent traffic, as is typical of the Bay Area. Project construction will primarily be focused on the east side of the highway, just south of a pedestrian overcrossing that links McCrea Memorial Park on the east side of the road to Leona Heights Park on the west side. Leona Heights Park has additional westward connectivity with the Leona Regional Open Space which continues to the expansive coastal range.

Within the project area, SR 13 is constructed upon fill material, elevating the road bed above the topography and modified habitat on either side of the road. The project area includes Lion Creek which flows parallel and perpendicular to SR 13. Lion Creek is an urban stream that flows through a combination of culverts, concrete lined channels, and modified earthen creek bed. The creek's path,

hydrology, and condition have been impacted by past logging, sulphur mining, and urbanization (Hackenjos *et al.* 2010). This heavily engineered drainage continues to flow from the Oakland Hills to the San Francisco Bay and includes stretches of riparian habitat. Despite rerouting and contamination, the creek continues to support fish and other aquatic species, though SR 13 crossing is thought to be a physical barrier to anadromous fishes (Leidy *et al.* 2005). The creek has been the subject of ongoing restoration projects including the removal of concrete, revegetation, and remediation of water quality issues associated with past mining operations.

The edges and median of SR 13 are vegetated buffers between the road way and adjacent development and open space. There are few constructed barriers along the SR 13 right-of-way to prevent access by wildlife attempting to move from one side of the highway to the other. Consistent traffic likely deters certain wildlife species and individuals from attempting to cross while those that do, risk the unfortunate outcome of colliding with a vehicle. Animals do cross SR 13 and some movements result in "roadkill" as recorded in the *California Roadkill Observation System* (REC 2014). Wildlife diversity and abundance along the SR 13 corridor is likely relatively higher in the action area given the habitat on either side in McCrea Memorial Park and Leona Heights Park. Lion Creek is directed under SR 13 through a 72-inch diameter, 240-foot long concrete culvert but it is uncertain which taxa of aquatic or terrestrial wildlife are able to use this feature for "safe passage".

McCrea Memorial Park is managed by the Oakland Park Department and includes woodland and riparian habitat along with casting pools and constructed ponds that were once stocked with trout. Lion Creek flows through McCrea Memorial Park.

Leona Heights Park is managed by the City of Oakland, and is a much larger park with more extensive native habitat. Leona includes woodland, riparian, second growth redwood, chaparral, and grassland vegetation. It also includes Lion Creek and vernal pools. The Leona Heights Park trail system continues through Merritt College, linking with East Bay Regional Park's Leona Canyon Regional Open Space.

California Red-Legged Frog

The action area is located with the range of the California red-legged frog. A map depicting the species' range is included in the Service's online profile for the species at http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=D02D. The action area is within the California red-legged frog's South and East San Francisco Bay Recovery Area (Area 4) (Service 2002). Critical habitat has been designated for the California red-legged frog but does not occur within the action area.

The California red-legged frog is relatively more prevalent in the San Francisco Bay Area and the coast range than it is throughout the remainder of its current range. Perhaps due to the moderate climate, it is not uncommon to find the listed frog in within and adjacent to urbanized locations of the Bay Area. The action area includes aquatic habitat within Lion Creek, constructed drainage systems, ponds within McCrea Memorial Park, and seasonal pools within Leona Heights Park. These aquatic resources provide habitat for foraging, cover, and retreat during dry and warm periods. In urban environments, creek and drainage systems may provide relatively safer corridors for California red-legged frog movement between resources and dispersal. Step pools within Lion Creek and the ponds in the adjacent parks provide potential California red-leged frog breeding habitat. The surrounding riparian and woodland vegetation community provides the species with additional habitat for foraging, cover, and movement.

The Service believes that it is reasonable to conclude that the California red-legged frog may occur within the action area because: (1) the project is located within the species' range and current distribution; (2) there is suitable upland habitat within the construction footprint and aquatic habitat within the action area; (3) the California red-legged frog has been documented in similar habitat within an urban setting elsewhere in the Bay Area; and (4) the biology and ecology of the animal.

Alameda Whipsnake

The action area is within the range of the Alameda whipsnake. A map depicting the species' range is included in the Service's online profile for the species at http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C04A. An Alameda whipsnake was collected in the adjacent Leona Heights Park and it is possible that the species still occupies grassland, scrub, and woodland habitat in the vicinity (Service 2003). Critical habitat has been designated for the Alameda whipsnake but does not occur within the action area.

The Alameda whipsnake is typically associated with areas of scrub vegetation and rocky outcrops within its range. However, it will also travel into adjacent grassland, riparian, and woodland communities. Scrub vegetation is located near the action areas. The action area includes riparian and woodland vegetation where the snake could be encountered. The Service visited the proposed project area and determined that the woodland vegetation in the action area is similar to where Alameda whipsnakes are encountered.

The Service believes that it is reasonable to conclude that the Alameda whipsnake may occur within the action area because: (1) the project is located within the species' range; (2) the species has been collected nearby; (3) there is suitable habitat within the action area; (4) the habitat within the action area is similar to that where the Service has encountered the species; and (5) the biology and ecology of the animal.

Effects of the Action

Direct effects of the proposed project are effects occurring within the action area during construction of the proposed project. Direct effects may be temporary (lasting less than 1 year) or permanent (lasting more than 1 year). Indirect effects are the effects of the proposed project generally occurring later in time after construction has been completed (*e.g.*, degradation of habitat due to the spread of invasive plant species; barriers to dispersal due to the installation of retaining walls). An interrelated activity is an activity that is part of the proposed project and depends on the proposed project for its justification. An interdependent activity is an activity that has no independent utility apart from the action under consultation. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification.

The action area provides suitable habitat for the California red-legged frog and Alameda whipsnake. As quantified in the January 2014 BA, the project will result in the loss of 0.4857 acre of riparian and oak woodland habitat for the listed frog and snake. Ground disturbing activities will include excavation, drilling holes, building a retaining wall, and replacing a culvert, as well as the work space needed to complete the activities. Of the disturbed habitat, 0.0937 acre will lost and converted to hardscape, while the remaining 0.392 acre of work area will subject to restoration activities that should eventually result in the restablishment of baseline habitat values for the California red-legged frog and Alameda whipsnake.

Caltrans proposes to minimize adverse effects related to the proposed project by implementing the *Conservation Measures* included in the *Description of the Proposed Action* section of this BO. Effective implementation of the *Conservation Measures* will likely minimize but not prevent adverse effects to the California red-legged frog and Alameda whipsnake.

The activities associated with the ground-disturbing activities may result in similar adverse effects to the California red-legged frog and Alameda whipsnake. Project activities are limited to upland habitat. Therefore, adverse effects will be limited to juvenile and adult life stages of the California red-legged frog. The Service concludes that the California red-legged frog and Alameda whipsnake could be encountered throughout the construction footprint.

Access by construction equipment and personnel and excavation of the project site could result in the disturbance and potential death of individual frogs and snakes. It will be important that Service-approved monitors "clear" sites to avoid crushing or otherwise harming frogs and snakes above ground, below ground, or under cover sites such as boards or debris. The project does not include permanent or temporary ground disturbance to scrub vegetation, the whipsnake's primary habitat. Snakes entering the construction footprint vicinity would likely be utilizing the area for above-ground activity such as movement and foraging. It is less likely that whipsnakes would be killed or injured by construction activities given adequate onsite biological monitoring.

Biological monitoring will include pre-construction surveys as well as an active presence during construction. Frogs may be actively moving around, through, or within the work area during the evening as well as when work is taking place. This places greater emphasis on thorough biological clearance of work areas and under staged equipment and materials prior to the start of each day's activities.

If unrestricted, biologists and construction workers traveling to the action area from other project sites may transmit diseases by introducing contaminated equipment. The chance of a disease being introduced into a new area is greater today than in the past due to the increasing occurrences of disease throughout amphibian populations in California and the United States. It is possible that chytridiomycosis, caused by chytrid fungus, may exacerbate the effects of other diseases on amphibians or increase the sensitivity of the amphibian to environmental changes (*e.g.*, water pH) that reduce normal immune response capabilities (Bosch *et al.* 2001, Weldon *et al.* 2004).

Discovery, capture, and relocation of individual California red-legged frogs and Alameda whipsnakes may avoid injury or mortality; however, capturing and handling animals may result in stress and/or inadvertent injury during handling, containment, and transport. Although survivorship for translocated animals has not been estimated, survivorship of translocated wildlife, in general, is lower because of intraspecific competition, lack of familiarity with the location of potential breeding, feeding, and sheltering habitats, and increased risk of predation.

Backhoe noise, vibration, increased human activity, and artificial lighting during the project may interfere with normal behaviors such as feeding, sheltering, movement between refugia and foraging grounds, and other essential behaviors. This can result in avoidance of areas that have suitable habitat but intolerable levels of disturbance. If left exposed overnight, animals can become trapped in excavated pits. The installation of ramps should provide a means of exit but trapped frogs or snakes risk being directly killed or may be unable to escape and be killed due to desiccation, entombment, or starvation. Proper trash disposal is often difficult to enforce and is a common non-compliance issue. Improperly disposed edible trash could attract predators, such as raccoons, crows, and ravens, to the site, which could subsequently prey on the listed herpetofauna.

Caltrans' commitment to use erosion control devices other than mono-filament should be effective in avoiding the associated risk of entrapment that can result in death by predation, starvation, or desiccation (Stuart *et al.* 2001).

If unrestricted, the proposed construction activities could result in the introduction of chemical contaminants to frog and snake habitat. Exposure pathways could include inhalation, dermal contact, direct ingestion, or secondary ingestion of contaminated soil, plants or prey species. Exposure to contaminants could cause short- or long-term morbidity, possibly resulting in reduced productivity or mortality. However, Caltrans proposes to minimize these risks by implementing BMPs which will consist of refueling, oiling, or cleaning of vehicles and equipment a minimum of 50 feet from riparian and aquatic areas; installing coir rolls, straw wattles and/or silt fencing to capture sediment and prevent runoff or other harmful chemicals from entering the aquatic habitat; and locating staging, storage and parking areas away from aquatic habitat.

Stabilization of the embankment will likely alleviate the risk of future sediment release into Lion Creek. Adequate restoration of temporary work areas within the project footprint to baseline or better habitat values will reduce the adverse effects of the project. Acquisition of in-perpetuity preserved and managed habitat occupied by the California red-legged frog and Alameda whipsnake will reduce the effects of permanent and temporal habitat loss. The extent to which the preservation of offsite habitat offsets the effects of the project will depend on various factors such as the proximity to the action area, its function in offsetting baseline road effects, and relation to the recovery of each species.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this BO. Future Federal actions that are unrelated to the SR 13 Soldier Pile Wall Project are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service is not aware of specific projects that might affect listed species in the action area that are currently under review by State, county, or local authorities.

Conclusion

After reviewing the current status of the California red-legged frog and Alameda whipsnake, the environmental baseline for the action area, and the effects of the proposed action, and the cumulative effects on the species, it is the Service's biological opinion that the SR 13 Soldier Pile Wall Project, as described herein, is not likely to jeopardize the continued existence of these two species. We base this conclusion on the following: (1) the project is small in area and limited in scope; (2) the action area is located in an urban area; (3) the action will be completed in a relatively short period of time; (4) successful implementation of the described *Conservation Measures* is likely to reduce the potential for proposed construction activities to result in disruption of normal behavior or risk of injury; (5) habitat disturbed for temporary work access will be restored to baseline levels; and (6) Caltrans will partially offset habitat loss with offsite, in-perpetuity habitat preservation and management.

INCIDENTAL TAKE STATEMENT

Section 9(a)(1) of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened fish and wildlife species without special exemption. Take is

defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with this *Incidental Take Statement.*

The measures described below are non-discretionary, and must be implemented by Caltrans so that they become binding conditions of any grant or permit issued to Caltrans as appropriate, in order for the exemption in section 7(o)(2) to apply. Caltrans has a continuing duty to regulate the activity covered by this *Incidental Take Statement.* If Caltrans (1) fails to assume and implement the *Terms and Conditions* or (2) fails to adhere to the *Terms and Conditions* of the *Incidental Take Statement* through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, Caltrans must report the progress of the action and its impact on the species to the Service as specified in the *Incidental Take Statement* [50 CFR §402.14(i)(3)].

Amount or Extent of Take

California Red-Legged Frog
The Service anticipates that incidental take of the California red-legged frog will be difficult to detect due to their small size, wariness, and cryptic nature. When California red-legged frogs are not in their aquatic breeding sites, they may be taking cover in burrows, dense vegetation, or other cover sites a distance from the breeding habitat. Finding an injured or dead California red-legged frog is unlikely due to their relatively small body size, rapid carcass deterioration, and likelihood that the remains will be removed by a scavenger. Losses of this species may also be difficult to quantify due to a lack of baseline survey data and seasonal/annual fluctuations in their numbers due to environmental or human-caused disturbances. There is a risk of harm, harassment, injury and mortality as a result of the proposed construction activities, the permanent and temporary loss/degradation of suitable habitat, and capture and relocation efforts; therefore, the Service is authorizing take incidental to the proposed action as: (1) the injury and mortality of one adult or juvenile California red-legged frog; and (2) the capture, harm and harassment of all California red-legged frogs within the action area.

Alameda Whipsnake
The Service expects that incidental take of the Alameda whipsnake will be difficult to detect or quantify because this animal may range over a large territory and the finding of an injured or dead individual is unlikely because of their relatively small body size and cryptic appearance. Losses of this species also may be difficult to quantify due to seasonal fluctuations in their numbers. There is a risk of harm, harassment, injury and mortality as a result of the proposed construction activities, the permanent and temporary loss/degradation of suitable habitat; however, proper implementation of avoidance measures should be effective in preventing incidental take due to harm, injury, or mortality. Therefore, the Service is authorizing take incidental to the proposed action as the harassment of all Alameda whipsnakes inhabiting or utilizing the action area.

Upon implementation of the following *Reasonable and Prudent Measures*, the California red-legged frogs and Alameda whipsnakes within the action area in proportion to the amount and type of take outlined above will become exempt from the prohibitions described under section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

The Service has determined that this level of anticipated take for the California red-legged frog and Alamenda whipsnake is not likely to jeopardize the continued existence of these species.

Reasonable and Prudent Measure

The Service has determined that the following reasonable and prudent measure is necessary and appropriate to minimize the effect of the action on the California red-legged frog and Alameda whipsnake. Caltrans will be responsible for the implementation and compliance with this measure:

1. Minimize the adverse effects to the California red-legged frog and Alameda whipsnake and their habitats in the action area by implementing their proposed project, including the conservation measures as described, with the following terms and conditions.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, Caltrans must comply with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The following *Terms and Conditions* implement *Reasonable and Prudent Measure* one (1):

    a. Caltrans shall include language in their contracts that expressly requires contractors and subcontractors to work within the boundaries of the project footprint identified in this BO, including staging and access.

    b. Each California red-legged frog encounter shall be treated on a case-by-case basis in coordination with the Service but general guidance is as follows: (1) leave the non-injured animal if it is not in danger or (2) move the salamander or frog to a nearby location if it is in danger.

    These two options are further described as follows:

    1) When a California red-legged frog is encountered in the action area the first priority is to stop all activities in the surrounding area that have the potential to result in the harm, harassment, injury, or death of the individual. Then the monitor needs to assess the situation in order to select a course of action that will minimize adverse effects to the individual. Contact the Service once the site is secure. The contacts for this situation are Ryan Olah (*ryan_olah@fws.gov*) or John Cleckler (*john_cleckler@fws.gov*). They can also be reached at (916) 414-6600. If you get voicemail messages for these contacts then contact John Cleckler on his cell phone at (916) 712-6784. Contact the Service prior to the start of construction to confirm the status of this contact information.

The first priority is to avoid contact with the animal and allow it to move out of the action area and hazardous situation on its own to a safe location. The animal should not be picked up and moved because it is not moving fast enough or it is inconvenient for the construction schedule. This guidance only applies to situations where a California red-legged frog is encountered on the move during conditions that make their upland travel feasible. This does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the life history of the California red-legged frog should they move outside the construction footprint.

Avoidance is the preferred option if the animal is not moving and is using aquatic habitat or is within some sort of burrow or other refugia. The area should be well marked for avoidance by construction and a Service-approved biological monitor should be assigned to the area when work is taking place nearby.

2) The animal should be captured and moved when it is the only option to prevent its death or injury.

If appropriate habitat is located immediately adjacent to the capture location then the preferred option is short distance relocation to that habitat. This must be coordinated with the Service but the general guidance is the frog should not be moved outside of the area it would have traveled on its own. Under no circumstances should a salamander or frog be relocated to another property without the owner's written permission. It is Caltrans' responsibility to arrange for that permission.

The release must be coordinated with the Service and will depend on where the individual was found and the opportunities for nearby release. In most situations the release location is likely to be into the mouth of a small burrow or other suitable refugia and in certain circumstances pools without non-native predators may be suitable.

Only Service-approved biologists for the project can capture California red-legged frogs. Nets or bare hands may be used to capture California red-legged frogs. Soaps, oils, creams, lotions, repellents, or solvents of any sort cannot be used on hands within 2 hours before and during periods when they are capturing and relocating California red-legged frogs. To avoid transferring disease or pathogens between sites during the course of surveys or handling of amphibians, Service-approved biologists must use the following guidance for disinfecting equipment and clothing. These recommendations are adapted from the *Declining Amphibian Population Task Force's Code* (http://www.open.ac.uk/daptf/).

i. All dirt and debris, including mud, snails, plant material (including fruits and seeds), and algae, must be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water and/or an amphibian. Cleaned items should be rinsed with fresh water before leaving each site.

ii. Boots, nets, traps, etc., must then be scrubbed with either a 70 percent ethanol solution, a bleach solution (0.5 to 1.0 cup of bleach to

1.0 gallon of water), QUAT 128 (quaternary ammonium, use 1:60 dilution), or a 6 percent sodium hypochlorite 3 solution and rinsed clean with water between sites. Avoid cleaning equipment in the immediate vicinity of a pond or wetland. All traces of the disinfectant must be removed before entering the next aquatic habitat.

iii. Used cleaning materials (liquids, etc.) must be disposed of safely, and if necessary, taken back to the lab for proper disposal.

iv. Service-approved biologists must limit the duration of handling and captivity. While in captivity, California red-legged frogs shall be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. Containers used for holding or transporting should not contain any standing water.

Reporting Requirements
In order to monitor whether the amount or extent of incidental take anticipated from implementation of the project is approached or exceeded, Caltrans shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, Caltrans must reinitiate formal consultation as per 50 CFR 402.16.

1. The Service must be notified within one (1) working day of the finding of any injured or dead listed species or any unanticipated damage to its habitat associated with the proposed project. Notification will be made to the Coast-Bay/Forest Foothills Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office at (916) 414-6600, and must include the date, time, and precise location of the individual/incident clearly indicated on a U.S. Geological Survey 7.5-minute quadrangle or other maps at a finer scale, as requested by the Service, and any other pertinent information. When an injured or dead individual of the listed species is found, Caltrans shall follow the steps outlined in the following *Disposition of Individuals Taken* section.

2. Sightings of any listed or sensitive animal species should be reported to the CNDDB (http://www.dfg.ca.gov/biogeodata/cnddb/).

3. Caltrans shall submit an annual construction compliance report prepared by the on-site biologist to the Service within forty (40) working days following the end of the year and/or project completion or within sixty (60) calendar days of any break in construction activity lasting more than forty (40) working days. This report will detail (i) dates that construction occurred; (ii) pertinent information concerning the success of the project in meeting compensation and other conservation measures; (iii) an explanation of failure to meet such measures, if any; (iv) known project effects on listed species, if any; (v) occurrences of incidental take of any listed species; and (vi) other pertinent information. The report(s) will be addressed to the Coast-Bay/Forest Foothills Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office.

Disposition of Individuals Taken
Injured listed species must be cared for by a licensed veterinarian or other qualified person(s), such as the Service-approved biologist. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a

freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen. The Service contact persons are the Coast-Bay/Forest Foothills Division Chief of the Endangered Species Program at the Sacramento Fish and Wildlife Office at (916) 414-6600; and the Resident Agent-in-Charge of the Service's Office of Law Enforcement, 5622 Price Way, McClellan, California 95562, at (916) 569-8444.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends the following actions:

1. Caltrans should explore means to increase safe crossing for wildlife across SR 13. Replacement of the Lion Creek Culvert with a larger structure could facilitate upstream movement for salmonids and safe passage for the California red-legged frog and Alameda whipsnake. An adequate structure would have the potential to provide habitat linkage for wildlife and recreational linkage between McCrea Memorial Park and Leona Heights Park.

2. Caltrans District 4 should work with the Service to develop a conservation strategy that would identify the current safe passage potential along Bay Area highways and the areas where safe passage for wildlife could be enhanced or established.

3. Caltrans should assist the Service in implementing recovery actions identified in the *Recovery Plan for the California Red-legged Frog* (Service 2002) and the *Draft Recovery Plan for Chaparral and Scrub Community Species East of San Francisco Bay, California* (Service 2003.

4. Caltrans should consider participating in the planning for a regional habitat conservation plan for the California red-legged frog and Alameda whipsnake, other listed species, and sensitive species.

5. Caltrans should consider establishing functioning preservation and creation conservation banking systems to further the conservation of the California red-legged frog and Alameda whipsnake. Such banking systems also could possibly be utilized for other required mitigation (i.e., seasonal wetlands, riparian habitats, etc.) where appropriate. Efforts should be made to preserve habitat along roadways in association with wildlife crossings.

6. Roadways can constitute a major barrier to critical wildlife movement. Therefore, Caltrans should incorporate culverts, tunnels, or bridges on highways and other roadways that allow safe passage by the California red-legged frog and Alameda whipsnake, other listed animals, and wildlife. Photographs, plans, and other information into the BAs if "wildlife friendly" crossings are incorporated into projects. Efforts should be made to establish upland culverts designed specifically for wildlife movement rather than accommodations for hydrology. Transportation agencies should also acknowledge the value of enhancing human safety by providing safe passage for wildlife in their early project design.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION--CLOSING STATEMENT

This concludes formal consultation on the SR 13 Soldier Pile Wall Project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been maintained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this BO, including work outside of the project footprint analyzed in this BO and including vehicle parking, staging, lay down areas, and access roads; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this BO including use of rodenticides or herbicides; relocation of utilities; and use of vehicle parking, staging, lay down areas, and access roads; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any additional take will not be exempt from the prohibitions of section 9 of the Act, pending reinitiation.

If you have questions concerning this BO, please contact John Cleckler, Caltrans Liaison (*john_cleckler@fws.gov*) or Ryan Olah, Coast-Bay/Forest Foothills Division Chief (*ryan_olah@fws.gov*), at the letterhead address, (916) 414-6600, or by electronic mail.

Sincerely,

Jennifer M. Norris
Field Supervisor

cc:
Melissa Escaron, California Department of Fish and Wildlife, Napa, California
Christopher States and Constance Ganong, Caltrans District 4, Oakland, California

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Appendix I: Title VI Statment

STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY EDMUND G. BROWN Jr., Governor

DEPARTMENT OF TRANSPORTATION
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MALCOLM DOUGHERTY
Director

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