

Exhibit 3: CEQA Documents

(Final Initial Study/Mitigated Negative Declaration and Notice of Determination)

Final

Pinole Creek Fish Passage Improvement Project Mitigated Negative Declaration

January 2015

Prepared for
Contra Costa County Resource Conservation District
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Concord, CA 94521

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Under contract to
California State Coastal Conservancy

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LIST OF ACRONYMS AND ABBREVIATIONS

A	ABAG	Association of Bay Area Governments
	APN	Assessor's Parcel Number
B	BAAQMD	Bay Area Air Quality Management District
	BMPs	Best Management Practices
C	CARB	California Air Resources Board
	CBC	California Building Code
	CCAA	California Clean Air Act of 1988
	CDFW	California Department of Fish and Wildlife
	CEQA	California Environmental Quality Act
	CESA	California Endangered Species Act
	CFR	Code of Federal Regulations
	cfs	Cubic feet per second
	CH ₄	Methane
	CHRIS	California Historical Resource Information System
	CO	Carbon Monoxide
	CO ₂	Carbon Dioxide
	CO ₂ e	Carbon Dioxide Equivalent
	Confire	Contra Costa Consolidated Fire District
	CY	Cubic Yards
	D	dba
DPM		Diesel Particulate Matter
DPS		Distinctive Population Segment
DTSC		Department of Toxic Substances
E		EBMUD
	EFH	Essential Fish Habitat
	EIR	Environmental Impact Report
	ESM	Engineered Streambed Material
	ESU	Evolutionarily Significant Units
F	°F	Degrees Fahrenheit
	Federal ESA	Federal Endangered Species Act
G	GHG	Greenhouse Gas
I	IPCC	Intergovernmental Panel on Climate Change
	IS	Initial Study
L	LOS	Level of service
M	mm	millimeter
	MMT	Million metric ton
	MMRP	Mitigation Monitoring and Reporting Program
	MND	Mitigated Negative Declaration
	MT CO ₂ e	Metric Tons of Carbon Dioxide Equivalents
N	NAAQS	National Ambient Air Quality Standards
	NMFS	National Marine Fisheries Service

	NO ₂	Nitrogen Dioxide
	N ₂ O	Nitrous Oxide
	NO _x	Nitrogen Oxides
	NOAA	National Oceanic and Atmospheric Administration
	NPDES	National Pollutant Discharge Elimination System
P	Pb	Lead
	PD	Planned Development
	PM	Particulate Matter
	PM ₁₀	Particulate Matter less than 10 micrometers
	PM _{2.5}	Particulate Matter less than 2.5 micrometers
	ppm	parts per million
R	RC	Restoration Center
	ROG	Reactive Organic Gases
	ROW	Right-of-Way
	RWQCB	Regional Water Quality Control Board
	RSP	Rock Slope Protection
S	SFRWQCB	San Francisco Regional Water Quality Control Board
	SO ₂	Sulfur Dioxide
	SR	Suburban Residential
	SSA	Service-sub Area
	SWRCB	State Water Resources Control Board
T	TAC	Toxic Air Contaminant
U	ULL	Urban Limit Line
	UPRR	Union Pacific Railroad
	USACE	U.S. Army Corps of Engineers
	USC	United States Code
	USEPA	U.S. Environmental Protection Agency
	USFWS	U.S. Fish and Wildlife Service
	USGS	U.S. Geological Survey
	WPCP	Water Pollution Control Plan

Initial Study/Mitigated Negative Declaration

EXECUTIVE SUMMARY

The proposed Project is located at a small site within the City of Pinole. The Project is proposed to improve the migration of a special status species, steelhead trout, by reconfiguring the Pinole Creek channel at the Interstate-80 (I-80) culvert.

PROJECT BACKGROUND AND OBJECTIVES

The primary goal of the proposed Pinole Creek Fish Passage Improvement Project (Project) is to provide adult steelhead access to upstream spawning and rearing habitat by enhancing passage conditions at the I-80 Pinole Creek culvert. Improving passage of juvenile salmonids and adult resident rainbow trout is an ancillary objective. Specific Project objectives are summarized below:

- Provide adult anadromous steelhead successful access to upper Pinole Creek a minimum of four out of every five years that have sufficient flows during migration;
- Facilitate survival of steelhead smolts migrating downstream to San Pablo Bay;
- Prevent an increase in flooding risk on adjacent properties; and
- Maintain a stable channel downstream of the culvert by minimizing scour and/or sedimentation.

Due to the size of the crossing and because it serves as critical infrastructure to I-80, replacement of the crossing is impractical. Therefore, the Project relies on a culvert retrofit to improve fish passage conditions. The proposed retrofit would satisfy state and federal design criteria for adult anadromous steelhead, and would also meet criteria for juvenile steelhead under many flow conditions. It would increase water depths and decrease water velocities within the culvert, and address the water surface drop at the culvert outlet while not reducing the current culvert flood capacity. The proposed design would also avoid increasing flooding on adjacent properties and would maintain a stable channel downstream of the culvert by preventing excess scour and/or sedimentation.

ORGANIZATION OF MITIGATED NEGATIVE DECLARATION

This Mitigated Negative Declaration (MND) is intended to provide Contra Costa County Resource Conservation District, as lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.), and other responsible agencies with the information required to exercise their discretionary responsibilities with respect to the proposed Project. The document is organized as follows:

Mitigated Negative Declaration

- Section 1 provides the Project background, agency and CCRCO (Applicant) information, Project objectives and anticipated agency approvals, and a summary of the public review and comment process.
- Section 2 describes the proposed Project including its location, layout, equipment, facilities, and an overview of the Project's operations and schedule.
- Section 3 provides the Initial Study (IS), including the environmental setting, identification and analysis of potential impacts, and discussion of measures that, if incorporated into the Project, would mitigate or avoid those impacts. The IS was conducted by CCRCO pursuant to section 15063 of the State CEQA Guidelines.
- Section 4 presents information on report preparation
- Section 5 lists the preparers of this document, and
- Section 6 provides the references.

Appendices

The appendices include specifications, technical data, and other information supporting the analysis presented in this MND.

- Appendix A: NMFS Steelhead Protection and Minimization Measures that May Apply to the Project
- Appendix B: Criteria Air Pollutant and Greenhouse Gas Emission Estimates
- Appendix C: Special Status Species
- Appendix D: NMFS Comments on the Pinole Creek Fish Passage Improvement Project 90% Design
- Appendix E: Mailing List of MND Recipients

1.0 PROJECT SUMMARY

Project Title: Pinole Creek Fish Passage Project

Lead Agency Name and Address:

Contra Costa County Resource Conservation District
5552 Clayton Road
Concord, CA 94521

Contact Person and Phone Number:

Ben Wallace, Executive Director
(925) 672-6522 ext. 106
ben.wallace@ca.nacdn.net

Project Location: Pinole Creek at Interstate I-80, Contra Costa County, California

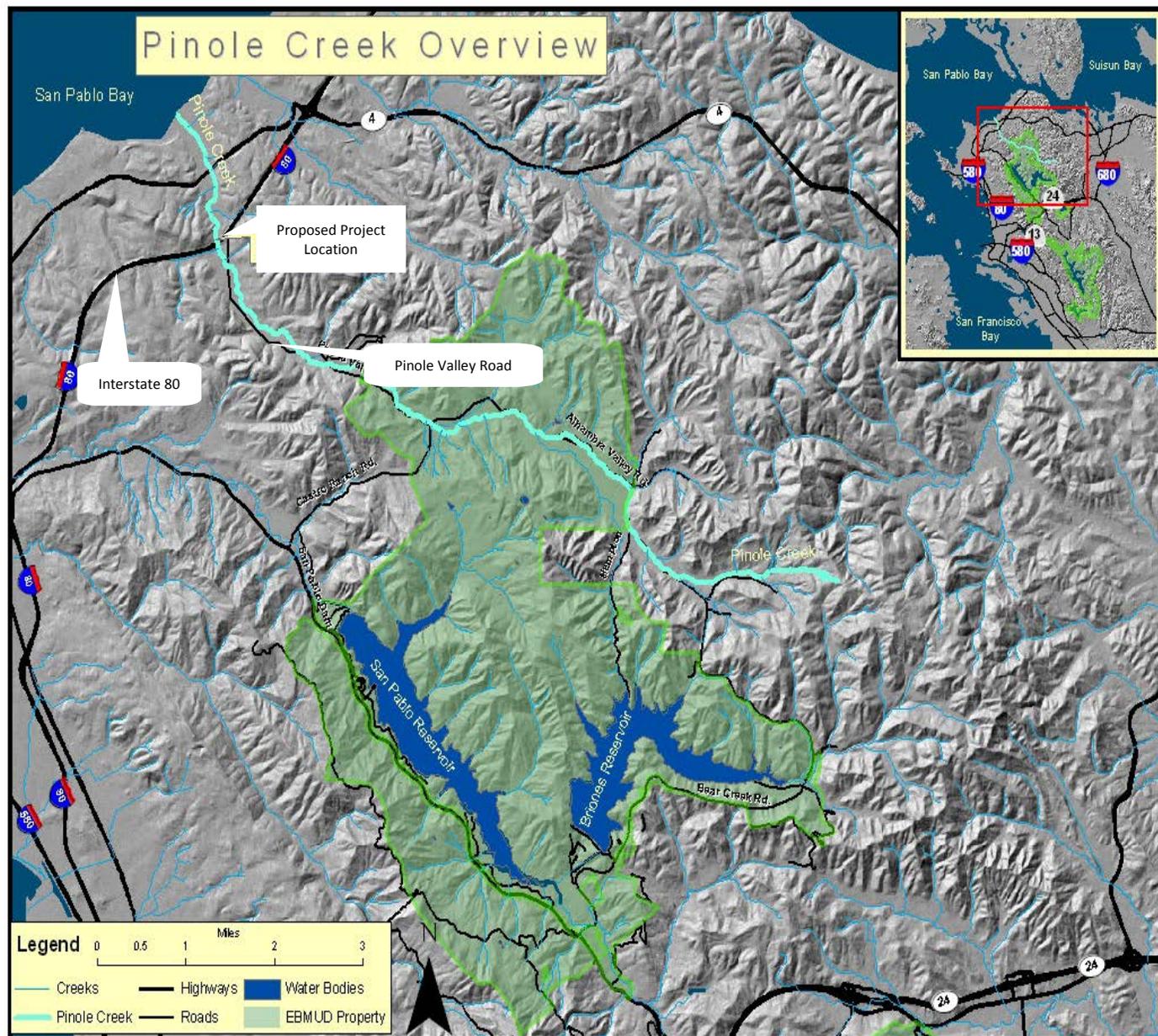
The Pinole Creek Fish Passage Improvement Project (Project) would be located at the crossing of Pinole Creek at Interstate 80 (I-80), approximately 100 yards west of the junction of I-80 and Pinole Valley Road (Figure 1). The Project site is approximately 1.5 miles upstream of San Pablo Bay and approximately 2.6 miles downstream of the Pinole city limits. The entire Project site lies within property owned by the California Department of Transportation (Caltrans) and the Contra Costa County Flood Control and Water Conservation District (Flood Control District).

The Project is located at:

Latitude & Longitude 39° 59' 46.82" N 122° 17' 16.91" W
(northern edge of culvert)

The Project includes the following properties and APN:

No APN	California Department of Transportation (Project located within right-of-way (ROW))
No APN	Contra Costa County Flood Control and Water Conservation District (Project located within ROW)
401-410-005	AMF Pinole Valley Lanes (a bowling alley) 1580 Pinole Valley Road Pinole, Ca 94564 (Alternate Staging Area 2)



Source: EBMUD 20140S14

FIGURE 1
PROJECT LOCATION

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No APN	Contra Costa County Flood Control and Water Conservation District 's Access Road/ bike path (construction access/proposed staging area)
401-410-017 (a portion of this parcel)	City of Pinole Henry Avenue Parking Area (Alternate Staging Area 1) and Temporary Water Reuse Area (Grass Area) 1400 Pinole Valley Road Pinole, CA 94564

Project Sponsor's Name and Address: Contra Costa County Resource Conservation District (CCRCD)

General Plan Designation

Pinole Creek is located in the City of Pinole in Contra Costa County. Surrounding City of Pinole General Plan designations are:

- East-Service Sub-Area (SSA) Pinole Valley Road Corridor. The Specific Plan designates the land use as Commercial Mixed Use (CMU).
- South-Suburban Residential (SR) and Service Sub-Area (SSA) Pinole Valley Road Corridor
- West-Open space (OS)
- North-Parks and Recreation (PR) and Service Sub-Area (SSA) Pinole Valley Road Corridor
- The site is bisected by the Transportation designation (T).

The Contra Costa County Flood Control and Water Conservation District's (Flood Control District) access road is a gated, paved road that also appears to serve as a bicycle and pedestrian path. Although it is posted against trespassing it is readily accessible by pedestrians and bicyclists, and equipped with a trash can as well as signage requiring dogs to be on leash.

Zoning

The City of Pinole's zoning map designates Pinole Creek as Open Space (OS) and the section of the Creek north of I-80 also as Planned Development (PD).

Surrounding Land Uses and Setting

The Project site is bisected by Interstate 80 (I-80). This portion of I-80 is on a bridge (Bridge Number 28-0184) under which is the culvert that would be modified. North of I-80 (downstream) the Project site is bordered to the east by a Flood Control District Access Road and the AMF Pinole Valley Lanes (a bowling alley), and to the west by a Flood Control District Access Road and an undeveloped hillside containing non-native grass species. Further downstream to the east are the City of Pinole's Henry Avenue parking area (City parking area), grass areas (Temporary Water Reuse Area), a daycare center, a ball field, and Collins

Elementary school. Further downstream to the west are tree-covered open space and a residential area (On The Hill Townhomes). San Pablo Bay is approximately 1.5 miles downstream of the northern end of the culvert.

South of I-80 (upstream), the Project site is bordered to east by a shopping center and other commercial uses, and to the west by a walking path and a residential area. Further upstream to the west are Creekside Park and Pinole Valley High School, a community center, and library; residential areas are located to the east.

Purpose and Use of this Initial Study

This Initial Study has been prepared to evaluate the potential environmental effects of the proposed Project and to identify possible mitigation measures to reduce any potentially significant impacts. This Initial Study will support decisions made by approval and permitting agencies in accordance with the California Environmental Quality Act (CEQA), including the California Public Resources Code section 21000 et seq., and the California Code of Regulations section 15000 et seq. The mitigation measures identified in this document would become conditions attached to the Project, agreed to by CCRCDC that support the adoption of a Mitigated Negative Declaration (MND). This Initial Study will be made available for public review for at least 30 days prior to adoption of the Mitigated Negative Declaration, and all comments on the document will be considered by the lead agency (CCRCDC) as part of that action. All responsible and trustee agencies will then rely on the adopted Mitigated Negative Declaration when reviewing the Project for subsequent permits or other approvals.

Public Review and Comment

Pursuant to State CEQA Guidelines sections 15072 and 15073, a lead agency must issue an MND in draft form for a minimum 30-day public review period. Local and State agencies and the public will have the opportunity to review and comment on the draft document. Responses to written comments received by CCRCDC during the 30-day public review period will be incorporated as appropriate into the final MND.

In accordance with State CEQA Guidelines section 15074, subdivision (b), CCRCDC will review and consider the proposed final MND, together with any comments received during the public review process, prior to taking action on approval of the MND and the Project.

Environmental Impacts and Proposed Mitigation Measures

The evaluation of environmental impacts provided in this MND is based, in part, on the Appendix G Checklist. An impact assessment matrix is provided as part of the evaluation for each environmental issue area, with impact levels defined as follows:

- **Potentially Significant Impact.** This column is checked if there was substantial evidence that a Project-related environmental effect may be significant, and no mitigation measures were identified to reduce the potential effect to a less than significant level. If

one or more “Potentially Significant Impacts” are identified, a Project Environmental Impact Report (EIR) must be prepared.

- **Less than Significant with Mitigation.** This column is checked when the Project may result in a significant environmental impact, but the incorporation of Project-specific mitigation measures into the Project will reduce the identified effect(s) to a less than significant level.
- **Less than Significant Impact.** This column is checked when the Project would not result in any significant effects. The Project’s impact was less than significant even without the incorporation of a project-specific mitigation measure.
- **No Impact.** This column is checked when the Project would not result in any impact in the category or the category did not apply.

No potentially significant impacts, as defined above, associated with the proposed Project were identified. Impacts associated with cultural resource are less than significant with mitigation; impacts associated with most resource areas are less than significant; and no impacts were identified to agricultural and forest resources, land use and planning, mineral resources, population and housing, public services, and recreation.

Public Agencies Whose Approval is Required

Multiple permits are required to implement the project. The following list shows the agency and the approval(s) required by that agency.

Multiple permits are required to implement the project. The following list shows the agency and the approval(s) that may be required by that agency.

City of Pinole:

- Basic Application for Development Review
- Use Permit
- Grading Permit
- Building Permit

Contra Costa Flood Control and Water Conservation District (Flood Control District):
Encroachment Permit

Caltrans:
Encroachment Permit

San Francisco Bay Regional Water Quality Control Board (SFRWQCB):
Clean Water Act Section 401 Water Quality Certification

California Department of Fish and Wildlife (CDFW):
Section 1602 Stream Alteration Agreement

U.S. Army Corps (USACE):

Clean Water Act Section 404 Permit

USACE Readiness Branch (San Francisco District):

Project Review prior to Flood Control District Encroachment Permit approval

National Marine Fisheries Service:

Programmatic Biological Opinion (BO)

U.S. Fish and Wildlife Service:

Letter of Concurrence

Other agencies and organizations that may rely on this Initial Study:

East Bay Municipal Utility District

California State Coastal Conservancy (grant funder)

Other grant funders

2.0 PROJECT DESCRIPTION

2.1 Introduction

The Contra Costa Resource Conservation District (CCRCD) is proposing fish passage improvements along Pinole Creek at a culvert crossing beneath Interstate 80 (I-80) in Contra Costa County, California (Figure 1). Currently, the 400-foot long Pinole Creek culvert under I-80 is a barrier to the upstream migration of juvenile and adult steelhead trout (*Oncorhynchus mykiss*) because it lacks sufficient water depth and produces excessive water velocities (Figure 2). The proposed Pinole Creek Fish Passage Improvement Project (Project) would improve migration and access to upstream spawning and rearing habitat through implementation of a baffled fishway notch, training walls, and a notched sill in the western culvert bay, and a 60-foot roughened rock chute in the existing flood control channel.

When implemented, these improvements would provide anadromous steelhead access to approximately 6.8 miles of suitable steelhead habitat upstream of the culvert, with nearly 4.3 miles of this habitat located partially in a protected watershed managed by the East Bay Municipal Utility District (EBMUD) and partially in the Briones Agricultural Preserve.

2.2 Environmental Setting

The Project site is located in a portion of the Pinole Creek watershed characterized by urban development. At the Project site Pinole Creek passes beneath I-80 via dual concrete box culvert bays. The box culvert bays are both 12 feet wide by 10 feet tall and approximately 320 feet in length. Concrete aprons at the inlet and outlet increase the overall length of the concrete culvert system to 393 feet. A Project survey found that each culvert bay has multiple slopes ranging from nearly flat in the downstream-most 130 feet to a slope of 1.77% in the upstream-most section (Michael Love & Associates 2013a).

Downstream (north) of the culverts, the site is bordered to the east by AMF Pinole Valley Lanes (a bowling alley) and a Caltrans right-of-way, and to the west by an undeveloped hillside containing non-native grass species. The culvert outlet discharges into a rock-lined trapezoidal flood control channel that is maintained by the Flood Control District. This channel reach has an overall slope of approximately 0.5% and contains long pools and small rock chutes that provide suitable fish passage conditions. However, it has little to no riparian vegetation and limited steelhead habitat value (Michael Love & Associates 2013a). The creek banks downstream of the culverts are also in a highly altered condition, with the east creek bank having a moderate slope and the west creek bank having a steep slope.

Upstream of the culvert, the channel is in a more natural condition, with a pool-riffle morphology and riparian vegetation canopy covering the active channel. This portion of the channel is highly entrenched and both commercial and residential development is located along the top of bank.

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Representative photographs of conditions upstream and downstream of the culvert are provided in Figures 3 and 4.

2.3 Location and Land Use

The Pinole Creek Fish Passage Improvement Project (proposed Project) would be located at the crossing of Pinole Creek at I-80, approximately 100 yards west of the junction of I-80 and Pinole Valley Road (Figure 2). The project site is approximately 1.5 miles upstream of San Pablo Bay within the City of Pinole.

Downstream near the mouth of Pinole Creek is the location of the Pinole Creek Demonstration Project Phase I that was completed in 2010. The Demonstration Project provided flood protection and habitat enhancement. A second phase of the Demonstration Project is currently in the process of obtaining funding. The Demonstration Project work is not related to the proposed Project.

2.3.1 Current Land Use

The main portion of the Project area is a dual box culverts located underneath an I-80 bridge owned by the California Department of Transportation (Caltrans) classified as Bridge Number 28-0184. The downstream (northern) portion of the project site consists of a Flood Control District channel that controls creek water from Pinole Creek. Concrete aprons extend north and south from the culvert, and the northern portion of Pinole Creek is a federally-authorized flood control channel. Along the tops of the eastern and western flood control channel banks are the Flood Control District's access roads. The western access road is west of the Project area (see Figure 2). The eastern access road, which would provide the primary access to the Project site, is also used as a bike and pedestrian path.

2.3.2 Topography/Watershed

The watershed for Pinole Creek is approximately 15.3 square miles and includes 33 miles of blue line streams. Pinole Creek is a tributary to San Pablo Bay. The lower third of the watershed is urban, the middle third is protected EBMUD watershed lands, and most of the upper third is located in the Briones Agricultural Preserve. Elevations within the watershed range from sea level up to 1,000 feet in elevation. The Project site is in the lower third (urban area) of the watershed.

2.4 Project Components

The proposed project would consist of the following components:

- Constructing a 184-foot-long concrete fishway notch through the 36-foot long inlet apron and within the upper 148-feet of the western culvert bay;
- Forming and installing approximately 13 concrete angled fish baffles within the upstream most 125 feet of the fishway notch;



Source: Pacific Biology 2014

FIGURE 3
PROJECT AREA VIEW
DOWNSTREAM OF CULVERT LOOKING SOUTH



Source: Pacific Biology 2014

FIGURE 4
PROJECT AREA VIEW
UPSTREAM OF CULVERT LOOKING SOUTH

- Constructing a 34-foot-long concrete training wall on the upstream apron and a 30-foot-long concrete training wall on the outlet apron to control flow distribution between the baffled and unbaffled culvert bays;
- Adding a notched sill on the downstream end of the outlet apron to pond water within the lower half of the western culvert bay during low flows;
- Constructing an approximate 60-foot long roughened rock chute in the existing flood control channel downstream of the culvert outlet pool to raise water levels and improve fish access to the baffled culvert
- Restore staging area and repave staging area as needed; and
- Seed and mulch disturbed soils on the east channel bank.

As described in the *Basis of Design Report* for the project (Michael Love & Associates 2013a), the proposed design was informed by a detailed analysis of existing hydraulic conditions within the culvert to determine feasible fish passage retrofit alternatives. The analysis considered applicable fish passage design criteria provided by the National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW); and accepted fish passage retrofit techniques provided by CDFW and Caltrans (Michael Love & Associates 2013a). The proposed design has been reviewed by the Flood Control District and the Readiness Branch, San Francisco District, of the U.S. Army Corps of Engineers (USACE), and the design was modified to accommodate their comments (Ben Wallace pers. comm. 2014). The Project has also been reviewed by the NMFS to verify fish passage design criteria (NMFS 2014). The terms of the grants for the Project require that the improvements be in place and maintained for 20 years.

The following subsections provide a more detailed description of each of the proposed Project components. Figures 5 and 6, taken from the 90% design drawings for the Project, show the training walls and fish passage notch (Figure 5) and the outlet sill and rock chute (Figure 6). These components are described below, starting at the upstream end of the Project.

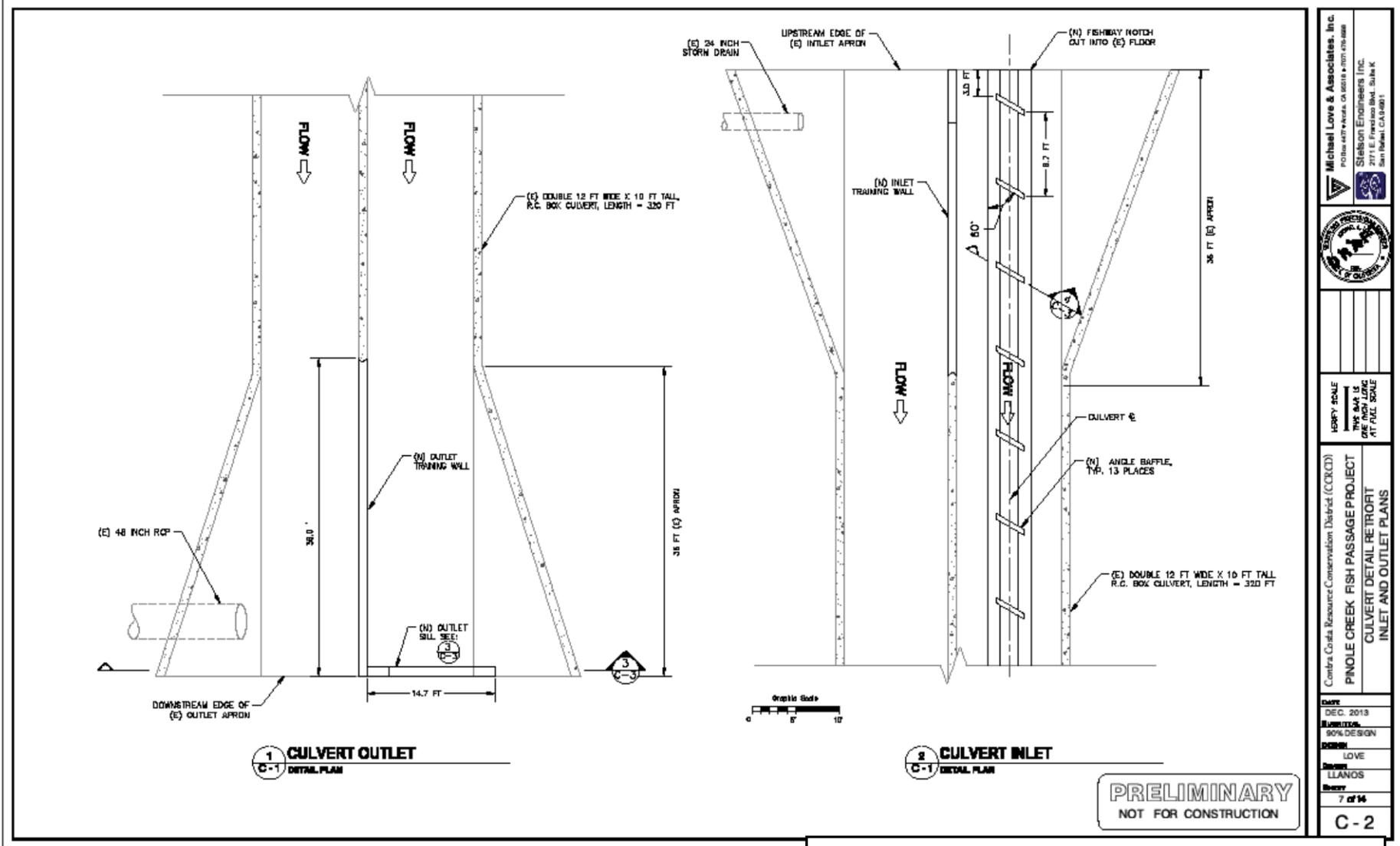
2.4.1 Inlet Apron Training Wall

A low concrete training wall would be constructed along the center of the inlet apron and would run from the upstream end of the apron to the center wall between the two bays. The purpose of the training wall is to direct the water flow to the western half of the culvert apron to maximize the water depth for fish passage. The top of the wall would be level and its height would vary between 3.0 and 3.7 feet. This height would be slightly above the water level on the west side of the apron at the approximate 1.2-year discharge of 350 cubic feet per second (cfs), and would maintain sufficient water velocities to keep stream-supplied sediment in transport and passing through the culvert. The upstream end of the training wall would be tapered to help facilitate passage of debris.

2.4.2 Fishway Notch

The left (western) culvert bay was chosen for fish passage improvements because it has the best alignment with the upstream channel and minimizes the risk of debris clogging and sedimentation on the inlet apron. A “fishway notch” would be created in the upper section of the west culvert bay and inlet apron by cutting and reforming the floor of the existing culvert.

The fishway notch would have two sections: baffled and transitional. The baffled section would increase water depths and slow water velocities at fish passage flows while maintaining inlet



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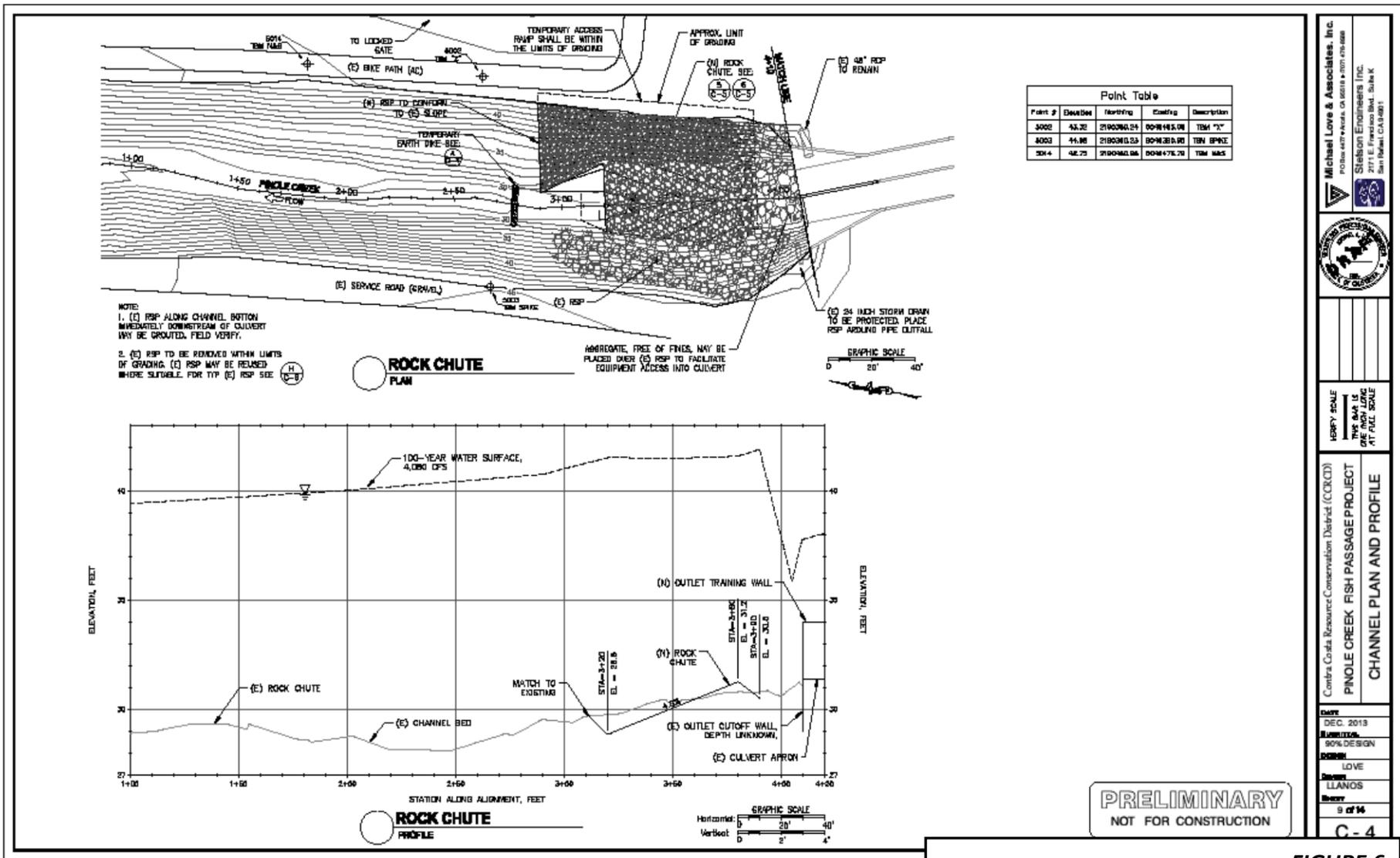
ERRY SCALE
1" = 10'-0"
ONE HALF INCH
AT FULL SCALE

Contra Costa Resource Conservation District (CCCRD)
PINOLE CREEK FISH PASSAGE PROJECT
CULVERT DETAIL RETROFIT
INLET AND OUTLET PLANS

DATE: DEC. 2013
PROJECT: BOX DESIGN
DESIGN: LOVE
DESIGN: LLANOS
ERRY

7 of 14
C-2

FIGURE 5
FISHWAY NOTCH, TRAINING WALLS, AND SILL



Source: Michael Love & Associates 2013b

FIGURE 6
ROCK CHUTE AND POOL

controlled conditions and existing culvert capacity at the 100-year discharge. The transitional fishway notch would provide adequate depth for fish in the mildly-sloped sections of the culvert, where baffles are not needed.

2.4.2.1 Baffled Fishway Notch

The baffled section of the fishway notch would extend from the upstream edge of the inlet apron to 89 feet into the west culvert bay, for a total length of 125 feet. The baffled section would have a constant slope of 1.44% and trapezoidal cross section with a bottom width of 2 feet and a top width of 5 feet. The baffled notch invert would be approximately 1.5 feet deep and the side slopes of the notch would be approximately 1H:1V. Because the baffled notch would have a constant slope but the existing culvert invert slope would vary between 1.41% and 1.77%, the actual depth of the notch would vary by as much as +/- 0.1 foot, causing the notch side slopes to also vary slightly.

Concrete fish baffles would be formed into the notch. They would be standard “angled baffles” designed in accordance with CDFW and Caltrans guidelines (Michael Love & Associates 2014a). The crest of these baffles would be sloped towards one side of the notch and skewed such that the lower portion of the baffle would face upstream. This alignment is intended to produce a swift current along one side of the notch to allow for more efficient transport of debris and sediment, while providing slower water suitable for fish passage along the other side. The 13 baffles would be spaced 9.7 feet apart, resulting in a fall from baffle crest to crest of 0.14 feet. The baffles would be skewed at 60 degrees from the culvert alignment. The baffle crests would be 0.5 feet at the low end and slope upward to a height of 0.75 feet.

2.4.2.2 Transitional Fishway Notch

The transitional fishway notch would begin at the downstream end of the baffled notch. It would be 59 feet in length, designed to provide enough water depth for fish passage, and would be comprised of two segments: a 51-foot long horizontal segment and an 8-foot long reverse-slope segment. The notch bottom would maintain a constant width of 2 feet and side slopes of 1H:1V. Because the existing invert slope is 1.1% in this section of culvert, the depth and top width of the notch would decrease in the downstream direction. The transitional notch would begin and end at seams, or cold joints, in the existing box culvert.

2.4.3 Notched Outlet Sill and Training Wall

The downstream end of the western culvert bay and outlet apron would be designed to pond water at low flows using a sill to meet NMFS and CDFW fish passage criteria for appropriate water velocity and depth (Figure 5). This outlet sill would span the left half of the apron, terminating at the training wall that extends from the center wall at the culvert outlet (Figure 6) to the outlet sill. The sill would concentrate low flows to improve the flow conditions for fish passage and minimize the effects to flood flows. The training wall between the outlet sill and the center culvert wall would be 3.0 feet tall and designed to not overtop until flows exceed the adult steelhead high passage design flow of 96 cubic feet per second (cfs). This design would avoid issues concerning fall-back (fish going over the training wall and back downstream) and would control depths to keep velocities low to meet fish passage criteria within the ponded section of the western culvert bay.

2.4.4 Roughened Rock Chute

The outlet sill would raise the water level on the outlet (northern) apron, which would increase the change in elevation between the outlet apron and the receiving outlet pool, also known as the water surface drop. If the elevation difference is too great it can inhibit the passage of fish at different life stages by becoming a leap barrier. To meet NMFS and CDFW maximum water surface drop criteria for adult and juvenile steelhead, the downstream end of the outlet pool would be raised slightly (about 0.7 feet). The downstream end of the pool would be linked to the existing channel by constructing a 60-foot long sloping roughened rock chute in the existing flood control channel that would extend downstream at a 4% slope. The crest of the chute at the downstream end of the outlet pool would be located 30 feet downstream of the existing culvert outlet apron. The downstream end of the chute would terminate within an existing pool.

The chute would have a v-shaped bottom to concentrate flows towards the center of the channel and provide sufficient water depth during periods of low stream flows. The chute bottom would be constructed of engineered streambed material (ESM) and the banks would be lined with rock slope protection (RSP). The existing RSP along the west channel bank would be left undisturbed. RSP would also be used to construct the 10-foot-long pool tail section of channel, which would form the transition between the new pool downstream of the culvert outlet and the crest of the rock chute. Unlike RSP, ESM is composed of a wide gradation of rock sizes. The larger rock, frequently referred to as the framework rock, comprises approximately 50% of the material. These larger rocks would be sized to provide both adequate hydraulic roughness at fish passage flows and remain stable at a 100-year flow event. The smaller material would fill the voids within the framework rock to control porosity and reduce infiltration, which helps keep low stream flows on the surface of the channel bed. Methods for sizing the rock would be consistent with USACE and CDFG procedures (Michael Love & Associate 2014a).

2.5 Project Construction

2.5.1 Construction Methodology

The following sections describe the proposed construction methods for the Project, including how construction would be sequenced, proposed equipment, and proposed locations for staging and access.

2.5.2 Construction Schedule and Area of Disturbance

Construction would occur over an estimated 9-week period. Construction would be conducted Monday through Friday during daytime hours. The Project would comply with the City's permitted construction hours which allow work between 7:00AM and 5:00PM. There would be no work at night or any night-time lights except security lights. Any security lights would be oriented to minimize glare to adjacent land uses, especially residences located west of Pinole Creek.

Construction would occur between June 15 and October 15. Restoration, construction, fish relocation and dewatering within the wetted and/or flowing creek channel would only occur within this window. The estimated maximum area of disturbance, including the access into the channel and work in the channel would be 0.35 acres.

2.5.3 Construction Sequence

The following sequence would be proposed to construct the Project:

- Install public signage and close work area to public
- Undertake pre-construction biological surveys
- Establish staging area
- Mobilize equipment and materials, including tanks for groundwater removed from the work area, if needed
- Install temporary erosion control measures
- Install fish exclusion screens and remove fish and amphibians, if present, from work area
- Install cofferdams and clear water bypass around project area
- Temporarily extend and reroute storm drain outlets that would otherwise discharge into work area
- Dewater work area and install groundwater removal pumps and piping as needed
- Construct temporary access ramp into channel and culvert outlet
- Cut culvert floor, form fishway notches, and pour concrete fishway notches. This component of the work would be completed in three phases. Each phase would consist of the following steps:
 - Cutting existing concrete, and breaking up and removing concrete rubble
 - Excavating to the new bottom of the notch
 - Installing reinforcement and forms for the concrete channel (i.e., the fishway notch)
 - Pouring concrete
 - Allowing adequate concrete curing time of (a minimum of 7 days) (Michael Love & Associates 2014b)
 - Forming and installing up to 13 baffles into the upper portion of the fishway notch
- Form and pour training walls and outlet sill (the construction of the training walls and outlet sill would occur during the same time period as construction of the fishway notch).
- Excavate the pool and rock chute area to appropriate depth and stockpile usable rock for re-use
- Stockpile, test, and dispose of excess soils from excavation
- Deliver, mix and install ESM (ESM would be mixed in the channel)
- Recontour any disturbed wetland areas to restore original morphology
- Place RSP along bank while removing access ramp and working way out of channel
- Remove cofferdams and restore storm drain outlets
- Remove equipment from staging area

- Restore staging area and repave staging area as needed, and
- Seed and mulch disturbed soils on the east channel bank

2.5.4 Construction Access, Staging, Equipment, and Demobilization

Construction access and the staging area would be located along the Flood Control District access road on the east bank (Figure 2). Two alternative staging areas are being considered if they are available at the time the Project starts. Alternative Staging Area 1 would be located at the City of Pinole's parking area adjacent to Henry Avenue (Figure 2). This lot is currently unused. Alternative Staging Area 2 would consist of the AMF Pinole Valley Lanes southern parking lot located on the west side of Pinole Valley Road, immediately north of I-80 (Figure 2). Construction equipment would access the flood control channel and culvert using the existing flood control access location for service vehicles located near the culvert.

The Flood Control District's access road is also used by pedestrians and bicyclists. The access road would be closed to the public during construction, and additional signage or fencing installed to deter unauthorized use. Bicyclists could detour via the sidewalk along Pinole Valley Road and enter the access road east of the bowling alley parking lot, via the Henry Avenue parking lot, or north of Henry Avenue. To provide access for equipment into the channel, the contractor may create a gravel-covered ramp from the access road into the channel. The access ramp would be entirely within the limits of disturbance defined for the project.

Potential equipment used to construct the Project may include:

- Mid-sized front end loader
- Skid steer front end loader with jackhammer attachment
- Dump truck
- Mid-sized and mini excavators
- Roller
- Track loader
- Vibratory compactor
- Concrete saw
- Cement mixer or concrete pump truck
- Small pumps
- Street sweeper
- Paver, and
- Dust control water truck

The proposed active construction area (work area) would be less than 0.35 acre. Staging areas may total up to 1 acre, and the Temporary Water Reuse Area (see Water Management below) is approximately 1 acre in size as well. Thus, the total construction area, not including access routes, would be about 2.5 acres. The vast majority of the staging area and access route is

paved or covered with gravel; a small portion of the staging area near the culvert has exposed soil.

The staging area would be fenced for security, and security lighting and/or other security features such as video cameras may be installed. All materials required for project construction would be brought to the staging area, and moved from the staging area to the active work area when needed. Excavated soil and concrete removed from the culvert would be stockpiled in the staging area until they are hauled off for reuse, recycling or disposal at an appropriate landfill. Excavated soils would be tested prior to reuse or disposal.

Stockpiles would be covered and bermed in accordance with construction best management practices (BMPs, see Section 2.5.10). Baker tanks for groundwater storage, if required, would also be located at the staging area. Following completion of construction, all remaining materials would be removed from the staging area and the area swept to remove any remaining soil or debris. The pavement along the access road and/or in the parking lot, if a parking lot is used, would be repaired or replaced, as needed, to restore the pavement to its pre-construction condition or better. Finally, the fence would be removed.

Groundwater would also be stored in containers and tested prior to reuse at the project site or disposal as described in the Project Description.

2.5.5 Traffic Control

Construction of the Project would require delivering construction equipment and materials to the site, and removing excess soil and concrete, as well as trash from the Project site. As described below, up to approximately 208 total truck trips may be required to construct the project. To ensure that the public is protected, that trucks are moved efficiently in and out of the Project site, and that traffic congestion is minimized, the contractor would be required to prepare a Traffic Management Plan. The Traffic Management Plan would address how trucks would be moved into the Project area, required safety measures such as signs and flaggers, and any necessary lane or closures (all such closures would have to be permitted).

An estimated 4 to 5 large flatbed trucks would be required to deliver the construction equipment to the site, and to remove large equipment at the conclusion of the project. An estimated 350 cubic yards (CY) of ESM, 475 CY of RSP, and 110 CY of new concrete would be required for the project. An estimated 85 CY of concrete rubble, and a combined total of 865 CY of excavated soil and rip-rip would have to be removed from the Project area. Miscellaneous materials, such as fencing for the project area, would also be delivered by truck. The new concrete would be delivered to the site in a concrete mix truck and pumped to the use location through a hose or pipe; ESM, RSP, soil and rip rap would be delivered or hauled off using dump trucks. While concrete mix trucks can carry up to 10 CY of concrete, smaller loads may be required to accommodate the load capacity of the access road. Thus for the purposes of this evaluation, concrete mix trucks are estimated to deliver an average of 5 to 6 CY of concrete per load, resulting in an estimated 18 – 22 trucks trips to deliver the new concrete. Similarly, dump trucks may have weight or size limitations associated with the access road. Consequently, dump

trucks delivering ESM or RSP rock are estimated to haul 10 CY per load; dump trucks hauling off excavated soil/rip rap and concrete rubble are also estimated to haul 10 CY/load. Therefore, a total of 176 trucks trips would be required to deliver the ESM and RSP rock, and remove the excavated soil/rip rap and concrete rubble.

All of the new concrete would be delivered during the construction of the fishway notch, and an estimated total of 150 CY of excavated soil and concrete rubble would be removed during the construction of the fishway notch. All ESM and RSP would be brought to the site during construction of the rock chute and new pool, and an estimated 800 CY combined of soil and rip would be excavated and during from the site during construction of the rock chute.

2.5.6 Fishway Notch Construction

To construct the fishway notch, concrete saws and potentially a jackhammer would be used to remove a portion of the culvert bottom. A portion of the sand and soil underlying the culvert bottom would also be removed to create a sufficiently deep excavation for the fishway notch. The contractor would then build forms for the bottom and walls of the new fishway notch, and pour concrete into the forms. The fishway notch would be constructed in three phases; the concrete would be allowed to cure for a minimum of seven days before the baffles are constructed. A total of up to 115 cubic yards (CY) of new concrete would be required to construct the fishway notch and baffles. Up to 85 CY of concrete and 65 CY of sand or soil would be removed during this portion of the work. The old concrete and excavated sand and soil material would be transferred to the staging area using a front end loader, and stockpiled in the staging area. Concrete rubble would be recycled and sand and soil would be tested for contaminants, if necessary, and hauled to the appropriate landfill. Testing for contaminants would be consistent with the Department of Toxic Substances Control (DTSC) Advisory (DTSC 2001) if reused offsite or in accordance with the landfill requirements if hauled to an appropriate landfill.

2.5.7 Training Wall and Sill Construction

To construct the training walls and sill, concrete anchors would be installed by drilling into the existing apron and epoxying rebar into the holes. Then the training walls and sill would be formed, and the concrete poured and allowed to cure.

2.5.8 Rock Chute and Pool Construction

To construct the rock chute and outlet pool, the existing channel bed would first be deepened and recontoured to the design elevation. Both existing rip-rap and soil would be removed from the channel bed. All work would occur in the dry; dewatering would be conducted as necessary (see Section 2.5.8, Water Management Plan).

An excavator would remove the rip-rap and soil and place the excavated materials on the bank of the channel where a front end loader would be used to stockpile the material at the designated staging location. The front end loader would also load the excavated material into dump trucks for disposal. Excavated material would be stockpiled in a bermed area and covered as needed to prevent run-off. The soil would be tested as needed for final disposition, following

the DTSC Advisory (DTSC 2001). Following excavation of the channel bed, rock for ESM would be delivered to the project site by dump truck, and transferred into the channel bed. The ESM and RSP would be placed using an excavator and a front-end loader. The various rock fractions comprising ESM would be mixed in the channel. Following installation of the ESM, RSP would be placed on the edges of the channel and the eastern channel bank.

An estimated 800 CY combined of rip-rap and soil would be excavated from the channel bed. An estimated 350 CY of ESM and 475 CY of RSP would be required to construct the rock chute and pool and stabilize the eastern channel bank following construction.

2.5.9 Water Management

In general, all construction would occur in the dry or in dewatered construction site condition. Prior to construction, the contractor would prepare a water diversion and dewatering plan for the Project site. It is anticipated that a temporary earthen dike would be placed on the upstream and downstream ends of the project reach to facilitate channel water diversion. A gravity stream diversion pipe and a sump pump and discharge hose would be used to divert water from upstream of the construction area to below the downstream earthen dike. A fish screen with 3/32-inch mesh attached to steel posts would be placed upstream of the earthen dike to exclude fish from the dewatered portion of the channel, and the pump would be equipped with 5 mm intake screening to protect California red-legged frog.

Groundwater beneath the Project site is very shallow, and excavation and concrete removal activities would be expected to encounter groundwater (creek underflow). The contractor may dig a sump upstream of the earthen dike and pump water from the sump to the downstream discharge point; use of a sump would limit creek underflow and minimize the amount of water that would have to be pumped out of the work area.

Groundwater (seepage) pumped out of the work area and/or accumulated rainfall within the work area may be used for dust control, irrigation, and other on-site purposes. Any groundwater or accumulated rainfall removed from the work area that cannot be reused would be pumped either into Baker tanks to allow for testing, or directly onto a grassy area (Temporary Water Reuse Area) immediately south of the Henry Avenue parking lot, as specified in the permits for the Project. Any water discharged to the Temporary Water Reuse Area would be passed through a filter bag prior to discharge. If Baker tanks are used to store water, they could also be used to filter and treat ground water encountered in the excavation areas before it is released downstream and back into the channel. The allowable approaches would be determined by applicable permit conditions, and any water discharged to the creek would meet effluent limits defined in the permits.

There are also three storm drains that would discharge into the work area. Temporary piping would be used to extend and reroute the drain outlets. The storm drain outlet at the upstream culvert apron would be routed to upstream of the construction area. The other two storm drain outlets would be routed to downstream of the construction area. The temporary piping would

be sloped to allow gravity flow of storm water (i.e., no pumping would be required). The temporary piping would be adjusted and relocated as needed to allow construction.

2.5.10 Best Management Practices for Construction

Table 2-1 lists the construction-related BMPs that would be implemented to minimize the introduction of dirt, debris and other construction waste into Pinole Creek. In addition, certain avoidance and minimization measures would be implemented to protect special status species and wildlife species that have the potential to occur at the site. These avoidance and minimization measures are shown in Table 2-2. A Health and Safety Plan would also be prepared to address potentially contaminated soil and groundwater that may be encountered during excavation. All workers potentially involved with excavation or handling of potentially contaminated soil would have the necessary training.

Table 2-1. Construction-Related Best Management Practices

No.	Name	Measure
BMP-1	Earthwork and Erosion Control	<ol style="list-style-type: none"> a. Fiber rolls, silt fences, or other erosion control measures would be used to minimize the flow of silt offsite. b. If used, erosion control fabric would consist of natural fibers that would biodegrade over time. No plastic or other non-porous material would be used as part of a permanent erosion control approach. c. If used, erosion control fabric would be anchored in place. Anchors can include U-shaped wire staples, metal geotextiles stake pins, or triangular wooden stakes. d. The contractor would inspect and repair/maintain all erosion control devices prior to and after any significant storm event, at 24-hour intervals during extended storm events, and a minimum of every 2 weeks until all erosion control measures have been completed. e. Immediately after project completion, the contractor would stabilize all exposed soil with mulch, seeding, and/or erosion control blankets. All artificial erosion control devices would be removed after the project area has fully stabilized. All exposed soil present in and around the project site would be stabilized within 7 days. f. All materials stockpiled on site would be located in areas where they cannot enter the stream channel. Devices such as plastic sheeting held down with rocks or sandbags over stockpiles, silt fences, or berms of hay bales would be used to minimize movement of exposed or stockpiled soils. g. Earth moving activities would only occur during dry weather

No.	Name	Measure
BMP-2	Construction Materials Staging and Stockpiling	<ul style="list-style-type: none"> a. All construction equipment would be staged in upland areas, away from sensitive natural communities or habitats. b. All construction-related items, including equipment, stockpiled material, temporary erosion control treatments, and trash would be removed within 72 hours of project completion. All residual soils and/or materials would be cleared from the project site. c. Construction materials, including chemicals, would not be stockpiled or stored where they could spill into water bodies or storm drains, or where they could cover aquatic or riparian vegetation. d. Any trash that may attract potential predators would be properly contained, and removed from the work site and disposed of daily.
BMP-3	Dewatering Operations	<ul style="list-style-type: none"> a. A dewatering plan would be prepared prior to construction. b. Stormwater runoff from or onto the site would be managed so that all runoff would be directed away from disturbed areas.
BMP-4	Non-Hazardous Material Management	<ul style="list-style-type: none"> a. Sand, dirt, and similar materials would be stored at least 10 feet from catch basins. All construction material would be covered with a tarp and contained with a perimeter control during wet weather, when rain is forecast, or when they would not be actively used within 14 days. b. All construction materials would be stored within a fenced area. c. Groundwater (seepage) pumped out of the work area and/or accumulated rainfall within the work area may be used for dust control, irrigation, or another on-site purpose as needed and to the extent possible. Any groundwater or accumulated rainfall water pumped out of the work area would be stored and tested, as required by Project permits, prior to reuse or disposal. d. Streets and paved areas would be swept or vacuumed as necessary. Water would not be used to wash streets or work areas. e. Concrete, grout, and mortar would be stored under cover, on pallets, and away from drainage areas. Any water from washing exposed aggregate concrete would be collected and removed for disposal offsite. f. Asphalt, concrete, and aggregate base material removed

No.	Name	Measure
BMP-5	Hazardous Material Management	<p>during construction would be recycled in compliance with Contra Costa County ordinances for recycling construction materials.</p> <p>g. Dumpsters would be checked regularly for leaks and to make sure they are not overfilled. Leaking dumpsters would be repaired or replaced promptly.</p> <p>h. All dumpsters would be covered with a tarp at the end of every work day and during wet weather.</p>
BMP-6	Spill Prevention and Control	<p>a. All hazardous materials and hazardous wastes would be labeled in accordance with city, county, state, and federal regulations.</p> <p>b. Hazardous materials and wastes would be stored in water tight containers within appropriate secondary containment structures and would be covered at the end of every work day or during wet weather when rain is forecast.</p> <p>c. Hazardous materials would be applied in accordance with the manufacturer's application instructions. No more than what is necessary would be used. Chemicals would not be applied outdoors when rain is forecast within 24 hours.</p> <p>d. All hazardous waste would be appropriately disposed of off-site.</p> <p>e. For stationary equipment that must be fueled on-site, secondary containment such as a drain pan or drop cloth would be provided in a manner to prevent accidental spill of fuels to underlying soil, surface water, or the storm drainage system.</p> <p>f. Sanitation facilities (e.g., portable toilets) would be surrounded by a berm, and a direct connection to the storm drainage system or receiving water would be avoided.</p> <p>g. Sanitation facilities would be regularly cleaned and/or replaced, and inspected regularly for leaks and spills.</p> <p>a. A Spill Prevention and Response Plan would be developed and reviewed by NOAA Restoration Center (RC) prior to commencement of construction activities, and would summarize the measures described below. The work site would be routinely inspected by a construction inspector to verify that the Spill Prevention and Response Plan is properly implemented and maintained. Contractors would be notified immediately if there is a noncompliance issue.</p>

No.	Name	Measure
		<ul style="list-style-type: none"> b. A stockpile of spill cleanup materials would be available at the construction site at all times. c. Prior to entering the work site, all field personnel would be trained in spill prevention, hazardous material control, and cleanup of accidental spills. d. When spills or leaks occur, they would be contained immediately. The contractor would take particular precautions to prevent leaks and spills from reaching the creek, gutter, street, or storm drain. Spilled materials would not be washed into a gutter, street, storm drain, or creek. e. All containment and cleanup materials would be disposed of properly.
BMP-7	Vehicle and Equipment Maintenance & Cleaning	<ul style="list-style-type: none"> a. Vehicles and equipment would be inspected for leaks frequently. Leaks would be repaired promptly, and drip pans would be used to catch leaks until repairs are made. b. In general, vehicles and equipment would not be washed on-site. If washing must occur on site, it would occur in a bermed area that would not allow rinse water to run into gutters, streets, storm drains, or creeks. c. Only water would be used to clean equipment onsite (i.e., no soaps, solvents, degreasers, etc. would be used). For stationary equipment that must be fueled on-site, secondary containment such as a drain pan or drop cloth would be provided to prevent accidental spills of fuels to underlying soil, surface water, or the storm drainage system.
BMP-8	Fire Risk Management	<ul style="list-style-type: none"> a. All earthmoving and portable equipment with internal combustion engines would be equipped with spark arrestors. b. During the high fire danger period (April 1–December 1), work crews would have appropriate fire suppression equipment available at the work site. c. On days when the fire danger is high, flammable materials would be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame. d. On days when the fire danger is high, portable tools powered by gasoline-fueled internal combustion engines would not be used within 25 feet of any flammable materials unless at least one round-point shovel or fire extinguisher is within immediate reach of the work crew (no more 25 feet away from the work area).
BMP-9	Dust Control	<ul style="list-style-type: none"> a. All exposed surfaces (e.g., parking areas, staging areas,

No.	Name	Measure
(BAAQMD Basic Measures)		<p>soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day.</p> <ul style="list-style-type: none"> <li>b. All haul trucks transporting soil, sand, or other loose material off-site shall be covered. <li>c. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. <li>d. All vehicle speeds on unpaved roads shall be limited to 15 mph. <li>e. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. <li>f. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage describing the requirement shall be provided for construction workers at all access points. <li>g. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator. <li>h. A publicly visible sign shall be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Table 2-2 provides the avoidance and minimization measures that would be implemented to minimize impacts to special-status species, including steelhead/Rainbow trout, California red-legged frog, western pond turtle, and special-status birds, the White-tailed kite and Cooper's hawk, and other nesting birds in at the project site during project construction. Prior to construction, each contractor would be provided with the specific measures to be followed during construction. A NMFS –approved qualified biologist would provide the construction crew with specific information on the listed species within the project site and the applicable protective measures which at a minimum would include the measures in Table 2-2.

Table 2-2. Special-Status Species Avoidance and Minimization Measures

No.	Avoidance and Minimization Measures
Steelhead/Rainbow trout	
STL-1	<p>The project would improve fish passage in Pinole Creek, and has specifically been designed to benefit steelhead. All minimization measures provided in the <i>Programmatic Biological Opinion for Permitting of Fisheries Restoration Projects within the Geographic Boundaries of NMFS' Santa Rosa, California, Field Office</i> (Programmatic BO) (NMFS 2006) that apply to the project site would be implemented to reduce construction-related impacts to steelhead/Rainbow trout. This Programmatic BO includes NMFS Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Conservation Recommendations. The construction manager and fisheries biologist would have a copy of the applicable measures in the Programmatic BO (Appendix 1 of the Programmatic BO and Appendix A of this MND) and the terms and condition of the Programmatic BO onsite during the construction.</p>
California Red-Legged Frog¹	
CRLF-1	<p>A USFWS-approved biologist(s) would be onsite during all activities that may result in take of the CRLF. The qualifications of the biologist(s) would be submitted to the USFWS for review and written approval at least thirty (30) calendar days prior to the date earthmoving is initiated at the project site. The USFWS -approved biologist(s) would keep a copy of this programmatic biological opinion and the appendix in their possession when onsite.</p>
CRLF-2	<p>No more than twenty-four (24) hours prior to the date of initial ground disturbance, a preconstruction survey for the CRLF would be conducted by a USFWS-approved biologist at the project site. The survey would consist of walking the project limits and within the project site to ascertain the possible presence of the species. The USFWS-approved biologist would investigate all potential areas that could be used by the CRLF for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as California ground squirrels or gophers. If any adults, subadults, juveniles, tadpoles, or eggs are found, the USFWS-approved biologist would contact the USFWS to determine if moving any of the individuals is appropriate. In making this determination the USFWS would consider if an appropriate relocation site exists. If the USFWS approves moving animals, the USACE through the CCRCD would ensure the USFWS approved biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Only USFWS-approved biologists would capture, handle, and monitor the CRLF.</p>
CRLF-3	<p>The USFWS-approved biologist(s) would be given the authority to freely communicate verbally, by telephone, electronic mail, or in writing at any time with construction personnel, any other person(s) at the project site, otherwise associated with the project, the USFWS, the CDFW, or their designated agents. The USFWS-approved biologist would have oversight over implementation of all the</p>

¹ Based on the USFWS's Programmatic Biological Opinion for California Red-legged Frog (Pacific Biology 2014).

No.	Avoidance and Minimization Measures
	conservation measures in this programmatic biological opinion, and, through the CCRCDD, would have the authority and responsibility to stop project activities if they determine any of the associated requirements are not being fulfilled. If the USFWS approved biologist(s) exercises this authority, the USFWS would be notified by telephone and electronic mail within twenty-four (24) hours. The USFWS contact is the Coast Bay Foothills Division Chief of the Endangered Species Program at the Sacramento USFWS Office at telephone (916) 414-6600.
CRLF-4	The USFWS-approved biologist would conduct employee education training for employees working on earthmoving and/or construction activities. Personnel would be required to attend the presentation which would describe the CRLF, avoidance, minimization, and conservation measures, legal protection of the animal, and other related issues. All attendees would sign an attendance sheet along with their printed name, company or agency, email address, and telephone number. The original sign-in sheet would be sent to the USFWS within seven (7) calendar days of the completion of the training.
CRLF-5	To minimize harassment, injury death, and harm in the form of temporary habitat disturbances, all project-related vehicle traffic would be restricted to established roads, construction areas, equipment staging, storage, parking, and stockpile areas. These areas would be included in pre-construction surveys and, to the maximum extent possible, established in locations disturbed by previous activities to prevent further adverse effects. Project-related vehicles would observe a 20-mile per hour speed limit within construction areas, except on County roads, and State and Federal highways. Off-road traffic outside of designated and fenced Project work areas would be prohibited.
CRLF-6	<p>A Water Pollution Control Plan (WPCP) and erosion control BMPs would be developed and implemented to minimize any wind- or water-related erosion and would be in compliance with the requirements of the USACE. CCRCDD would include provisions in construction contracts for measures to protect sensitive areas and prevent and minimize stormwater and non-stormwater discharges. Protective measures would include, at a minimum, those listed below.</p> <ol style="list-style-type: none"> a. No discharge of pollutants from vehicle or equipment cleaning would be allowed into any storm drains or water courses. b. Vehicle and equipment fueling and maintenance operations would be at least 50 feet away from water courses, except at established commercial gas stations or established vehicle maintenance facilities. c. Concrete waste and water from curing operations would be collected in washouts and would be disposed of and not allowed into water courses. d. Spill containment kits would be maintained onsite at all times during

No.	Avoidance and Minimization Measures
	<p>construction operations and/or staging or fueling of equipment.</p> <p>e. Dust control measures would include use of water trucks and organic tackifiers² to control dust in excavation-and-fill areas, covering temporary access road entrances and exits with rock (rocking), and covering of temporary stockpiles when weather conditions require.</p>
CRLF-7	<p>If a work site is to be temporarily dewatered by pumping, intakes shall be completely screened with wire mesh not larger than five millimeters to prevent CRLF from entering the pump system. Water shall be released or pumped downstream at an appropriate rate to maintain downstream flows during construction. Upon completion of construction activities, any barriers to flow shall be removed in a manner that would allow flow to resume with the least disturbance to the substrate.</p>
CRLF-8	<p>The USACE through CCRCD would maintain all construction equipment to prevent leaks of fuels, lubricants, or other fluids.</p>
CRLF-9	<p>If CRLF are encountered, each encounter with the CRLF would be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal would not be disturbed if it is not in danger; or (2) the animal would be moved to a secure location if it is in any danger. These procedures are further described below:</p> <ol style="list-style-type: none"> a. When a CRLF is encountered in the action area, all activities which have the potential to result in the harassment, injury, or death of the individual would be immediately halted. The USFWS-approved biologist would then assess the situation in order to select a course of action that would avoid or minimize adverse effects to the animal. To the maximum extent possible, contact with the CRLF would be avoided and CCRCD would allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a CRLF is encountered while it is moving to another location. It does not apply to animals that are uncovered or otherwise exposed or in areas where there is not sufficient adjacent habitat to support the species should the individual move away from the hazardous location. b. CRLF that are in danger would be relocated and released by the USFWS approved biologist outside the construction area within the same riparian area or watershed. If relocation of the CRLF outside the fence is not feasible (i.e., there are too many individuals observed per day), the biologist would relocate the animals to a USFWS preapproved location. Prior to the initial ground disturbance, CCRCD would obtain approval of the relocation protocol from the USFWS in the event that a CRLF is encountered and needs to be moved away from the project site. Under no circumstances would a CRLF be

² Tackifiers are bonding or adhesive agents that are used for hydraulic seeding and hay or straw mulch tacking and dust control. Wind can blow hay, straw, and dry soils away, while the impact of rain can wash away fine soils. Tackifiers reduce the susceptibility of fine soils, straw, and hay to movement by wind and rain.

No.	Avoidance and Minimization Measures
	<p>released on a site unless the written permission of the landowner has been obtained by CCRCD.</p> <p>The USFWS-approved biologist would limit the duration of the handling and captivity of the CRLF to the minimum amount of time necessary to complete the task. If the animal must be held in captivity, it would be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge. The container used for holding or transporting the individual would not contain any standing water.</p> <p>c. CCRCD would immediately notify the USFWS once the CRLF and the site is secure. The contact for this situation is the Coast Bay Foothills Division Chief of the Endangered Species Program by email and at telephone (916) 414-6600.</p>
CRLF-10	<p>Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the CRLF. A litter control program would be instituted at each project site. All workers would ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers would be removed from the project site at the end of each working day.</p>
CRLF-11	<p>All grindings and asphaltic-concrete waste may be temporally stored within previously disturbed areas absent of CRLF habitat and at a minimum of 150 feet from any culvert, pond, creek, stream crossing, or other water body. On or before the date of project completion, the waste would be transported to an approved disposal site.</p>
CRLF-12	<p>Restoration and re-vegetation work for temporary effects would be implemented using native California plant species collected on-site or from local sources (i.e., local ecotype). Native or non-native plant species and material from non-local sources would be utilized only with prior written authorization from the USFWS. All topsoil from natural lands would be removed, cached, and returned to the site according to USFWS-approved restoration protocols.</p>
CRLF-13	<p>Loss of soil from run-off or erosion would be prevented with straw bales, straw wattles, or similar means provided they do not entangle, block escape or dispersal routes of the CRLF.</p>
CRLF-14	<p>For onsite storage of pipes, conduits and other materials that could provide shelter for CRLF, an open-top trailer would be used to elevate the materials above ground. This is intended to reduce the potential for animals to climb into the conduits and other materials.</p>
CRLF-15	<p>To the maximum extent practicable, no construction activities would occur during rain events or within 24-hours following a rain event. Prior to construction activities resuming, a USFWS approved biologist would inspect the action area and all equipment/materials for the presence of CRLF. The animals would be allowed to</p>

No.	Avoidance and Minimization Measures
	move away from the project site of their own volition or moved by the USFWS-approved biologist.
CRLF-16	If CRLF are encountered, to the maximum extent practicable, night-time construction would be minimized or avoided, to the maximum extent practicable. Because dusk and dawn are often the times when the CRLF is most actively moving and foraging, to the maximum extent practicable, earthmoving and construction activities would cease no less than 30 minutes before sunset and would not begin again sooner than 30 minutes after sunrise. Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at the project site would be prohibited during the hours of darkness.
CRLF-17	Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form would not be used at the project site because CRLF can become entangled and trapped in them. Any such material found on site would be immediately removed by the USFWS-approved biologist, construction personnel, or CCRCD. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials would not be used.
CRLF-18	Trenches or pits one (1) foot or deeper that are going to be left unfilled for more than forty-eight (48) hours would be securely covered with boards or other material to prevent the CRLF from falling into them. If this is not possible, CCRCD would ensure wooden ramps or other structures of suitable surface that provide adequate footing for the CRLF are placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter would be immediately filled or securely covered so they do not become pitfall traps for the CRLF. The USFWS-approved biologist would inspect the trenches, pits, or holes prior to their being filled to ensure there are no CRLF in them. The trench, pit, or hole also would be examined by the USFWS-approved biologist each workday morning at least one hour prior to initiation of work and in the late afternoon no more than one hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the USFWS-approved biologist would remove and transport it to a safe location, or contact the USFWS for guidance.
Western Pond Turtle	
WPT-1	A qualified biologist would conduct a preconstruction clearance survey for western pond turtle within 48 hours prior to the commencement of construction activities. The survey area would include all onsite aquatic habitats, as well as upland areas potentially containing pond turtle nests. Any identified pond turtles would be relocated (by a qualified biologist in possession of a valid Scientific Collecting Permit) to a suitable location upstream of the work area. Any identified pond turtle nests would be avoided.
WPT-2	A qualified biologist would also be onsite during all initial dewatering activities. Any identified pond turtles would be relocated (by a qualified biologist in possession of a

No.	Avoidance and Minimization Measures
	valid Scientific Collecting Permit) to a suitable location upstream of the work area.
Special-Status Birds (White-tailed kite and Cooper's hawk) and Other Nesting Birds	
MB-1	<p>If construction activities would commence anytime during the nesting/breeding season of native bird species potentially nesting on the site (typically February through August in the Project region), a pre-construction survey for nesting birds would be conducted by a qualified biologist within two weeks of the commencement of construction activities. If active nests are found in areas that could be directly affected or are within 200 feet of construction and would be subject to prolonged construction-related noise, a no-disturbance buffer zone would be created around active nests for the duration of the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zones and types of construction activities restricted within them would be determined by taking into account factors such as the following:</p> <ul style="list-style-type: none"> • Noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; • Distance between construction activities and the nest, and amount of vegetation or other screening between the construction area and the nest; and • Sensitivity of individual nesting species and behaviors of the nesting birds.
MB-2	<p>Measures to prevent the commencement of nesting by cliff swallows and black phoebe would be implemented prior to the start of the nesting season. These measures may include the removal of existing nests while they are inactive, as determined by a qualified biologist. Exclusion methods (e.g., netting) should then be used to prevent cliff swallows or other bird species from constructing new nests in the culverts.</p>

CCRCD would request authorization from the National Marine Fisheries Service (NMFS) under the existing Programmatic Biological Opinion for Permitting of Fisheries Restoration Projects within the Geographic Boundaries of NMFS' Santa Rosa, California, Field Office (NMFS 2006), and would also implement applicable protection and minimization measures provided in that Biological Opinion. Potentially applicable protection and minimization measures are included in Appendix A.

2.6 Post-Construction Monitoring

Monitoring would be conducted to evaluate the performance of the fish passage improvements. Monitoring would include fish spawning surveys, photo monitoring, and the collection of precipitation data and any other monitoring required by regulatory or resource agencies permits for the proposed Project.

2.6.1 Fish Spawning Surveys

East Bay Municipal Utility District (EBMUD) would perform annual fish spawning surveys in Pinole Creek (EBMUD 2014). EBMUD does not own fee title or right-of-way in the Project site. It does own the Right-of-Way upstream in portions of the Pinole Creek watershed which contain suitable habitat for listed central California coastal steelhead ESU (*Oncorhynchus mykiss*). EBMUD biologists presently conduct annual spawning surveys in Pinole Creek, and would continue to do so for at least five years following construction of the fish passage enhancements. EBMUD has conducted annual spawning surveys in Pinole Creek since 2008, providing sufficient baseline data to compare with post-Project results.

The monitoring effort would consist of at least 2 surveys annually, during the peak fish migration period, in spawning reaches with the greatest spawning potential as determined from previous habitat mapping efforts. Redds from resident and anadromous fish would be counted and compared to pre-Project baseline data. These fish surveys would evaluate the success of the proposed Project in allowing passage of *O. mykiss* upstream of the culvert. An increase in observed steelhead redds upstream of the culvert, or an observed increase in the frequency of spawning steelhead, would indicate improved fish passage. EBMUD would also prepare reports for the spawning surveys.

2.6.2 Other Monitoring Activities

Photo monitoring of the fish passage improvements will be conducted annually during the spawning season at a variety of flows. The number of photo monitoring surveys will vary from year to year with the purpose of capturing a full range of flows that may be experienced at the site during the spawning season. Photos will be used to demonstrate that fish passage improvements are functioning properly and providing fish passage as designed. A stream gauge will be placed in the structure and depth readings will be recorded at the time of photo monitoring to demonstrate sufficient depths exist for fish passage in the structure at low flows.

Precipitation data will be collected in the Pinole Creek watershed during the 5 year monitoring period. This data will be used to classify the water year type and to correlate other monitoring data with rain events.

2.7 Inspection, Operation, and Maintenance

In addition to monitoring described in Section 2.6.2, inspection and maintenance would be performed routinely on the fish passage improvements. No other on-going activities or operations are required. Inspection and maintenance requirements for the culvert, flood control channel and proposed fish passage improvements are generally described in the Draft Operations and Maintenance Plan for Pinole Creek at Interstate 80 Fish Passage Improvement Project (Michael Love & Associates 2014a). The Draft Operations and Maintenance Plan would be finalized following completion of construction.

Caltrans owns and will continue to be responsible for the inspection and maintenance of the culvert system (Bridge Number 28-0184), including the fish passage modifications within the

western culvert bay and the inlet and outlet aprons. The Caltrans Bridge Maintenance Division will assess the condition of the culverts at two-year intervals as part of a routine infrastructure monitoring program, whether or not the proposed Project is implemented.

The Flood Control District owns the flood control channel and right-of-way immediately downstream of the I-80 culverts and owns the right-of-way along the stream channel immediately upstream of the culverts. The Flood Control District will continue to be responsible for routine inspection, maintenance, and repair of the flood control and upstream channel; these activities will continue to occur whether or not the proposed Project is implemented.

Finally, CCRCD would collaborate with Friends of Pinole Creek Watershed, a community group, to conduct periodic inspections of the culvert system and roughened rock chute in the downstream flood control channel to identify any sediment or debris accumulations that may pose a threat to fish passage, culvert capacity, or channel capacity.

The following inspection activities would be completed by Caltrans, the Flood Control District and/or CCRCD to ensure the proposed Project functions as designed.

- Culvert Structure Inspection. The culvert structure will be inspected biennially by Caltrans during their standard bridge inspection. For the Project elements, the inspection would focus on identifying fragmenting or cracking of concrete or exposure of reinforced steel within the fishway notch or along the baffles, outlet sill, or training walls; fatigue or potential failure of concrete anchors associated with baffles or training walls; and gaps that may result in seepage under baffles or training walls.
- Roughened Chute Inspection. Rock placed in the flood control channel would be inspected annually by the Flood Control District to evaluate stability and erosion along the entire channel in accordance with the USACE inspection requirements. As needed, CCRCD would annually inspect for movement of rock that could affect fish passage.
- Sediment and Debris Accumulation. CCRCD through its collaboration with Friends of Pinole Creek Watershed, and/or EBMUD would inspect the inlet to the culverts, the baffles, and the flood control channel for accumulations of debris on an annual basis. The annual inspections would be conducted prior to the onset of the rainy season. Inspections may also be conducted after large flow events capable of transporting debris, subject to the professional judgment of Caltrans or the Flood Control District, the relative size of storm event, level of risk, and workload. If excess debris is noted, CCRCD would notify Caltrans and/or the Flood Control District that debris removal is required.

Sediment accumulation would also be monitored annually by CCRCD/Friends of Pinole Creek Watershed. The inspections would assess if accumulated sediment is causing an excessive reduction in water depths and potentially impeding fish passage. If the inspection notes excessive sedimentation, a qualified fisheries biologist would evaluate the site and provide a professional opinion regarding potential effects on fish passage.

Maintenance activities would be performed as indicated by the inspections. Maintenance activities could include:

- Culvert Structure. Potential maintenance would include patching of concrete, removal and reforming damaged concrete baffles or training walls, and addition of steel angles or plates on top of, and anchored to, the concrete to reduce concrete abrasion or impact damage. If required, these activities may require a permit to complete.
- Roughened Chute. If rocks are displaced such that they could inhibit fish passage or compromise the structural stability of the chute, a long-reach excavator could be used to move the rocks back into place. The excavator would most likely work from the existing service roads on the east and west bank to move large rocks back into position and/or add rock to areas experiencing scour. The work area would be isolated from streamflow.
- Debris Accumulation. Removal of debris is the maintenance activity that is most likely to be required. Debris at inlets or within the flood control channel that might impede flow would be removed. The most likely accumulation points for debris would include the inlet training wall, inlet apron, and baffles.
- Sediment Accumulation. If accumulated sediment may be detrimental to fish passage, the sediment may be removed. It could be removed from the culvert using hand-crews with shovels and wheel barrows. Prior to this activity water would be diverted to the eastern culvert bay using sand bags placed across the inlet apron of the western culvert bay, between the training wall and wingwall. Any fish residing within the western culvert bay would be removed by a qualified fisheries biologist during placement of the sandbags and moved to a suitable upstream pool. Removal of sediment from the project area within the flood control channel could be accomplished either with hand-crews with shovels and wheel barrows or with a long-reach excavator working from the access roads along the east and west banks.

With the exception of emergency activities that could be required as a result of major storm events, maintenance activities would be conducted during the dry season (June 15 to October 15) to minimize potential effects to the Pinole Creek ecosystem. Applicable BMPs and avoidance and minimization measures used during construction (see Table 2-1) would be implemented for any maintenance activities involving heavy equipment. Annual maintenance activities are estimated to require less than 1 day per year, and would consist primarily of removal of debris. It should be noted that many of these maintenance activities (debris removal, sediment removal, and relocation of rocks) would be required to some extent regardless of whether the proposed Project is constructed.

3.0 EVALUATION OF ENVIRONMENTAL EFFECTS

3.1 SUMMARY OF ENVIRONMENTAL EFFECTS

The environmental factors checked below would be potentially affected by this project; that is, involve at least one impact that is a "Potentially Significant Impact" as indicated by the checklists in the following resource evaluations sections.

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

DETERMINATION

On the basis of this Initial Study:

Based on the environmental impact analysis provided by this Initial Study:

- 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 will be prepared.
- I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Signature

Date

Signature

Date

3.2 EVALUATION OF ENVIRONMENTAL EFFECTS

This section contains the Initial Study (IS) that was completed for the proposed Pinole Creek Fish Passage Improvement Project (Project) in accordance with the requirements of the California Environmental Quality Act (CEQA). The evaluation of environmental impacts provided in this Section is based on the environmental impact questions contained in Appendix G of the State CEQA Guidelines. The IS identifies site-specific conditions and impacts, evaluates their potential significance, and, where applicable, discusses ways to avoid or lessen impacts that may be potentially significant. The information, analysis, and conclusions included in the IS provide the basis for determining the appropriate document needed to comply with CEQA. For the proposed Project, based on the analysis and information contained herein, CCRCD finds there is evidence that the Project could have an effect on the environment; however, proper Project design and implementation of specified mitigation measures would avoid the effects or mitigate the effects to a point where clearly no significant effect on the environment would occur. As a result, CCRCD has concluded that a Mitigated Negative Declaration (MND) is the appropriate CEQA document for the Project.

The table below summarizes many of the Federal and State laws, regulations and policies applicable to the Project, by resource area. Many of these laws, regulations and policies apply to more than one resource area. Specific sections of these laws, regulations or policies are summarized for each applicable individual resource area. Local laws, regulations, and policies are described in the resource evaluation sections.

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project		
3.3 Aesthetics (NONE APPLICABLE)		
3.4 Agriculture and Forest Resources (NONE APPLICABLE)		
3.5 Air Quality and Greenhouse Gas Emissions		
US	Federal Clean Air Act (FCAA) (42 USC 7401 et seq.)	<p>The FCAA requires the U.S. Environmental Protection Agency (USEPA) to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. National standards are established for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM₁₀ and PM_{2.5}), and lead (Pb). In 2007, the U.S. Supreme Court ruled that carbon dioxide (CO₂) is an air pollutant as defined under the FCAA, and that the USEPA has authority to regulate GHG emissions. Pursuant to the 1990 FCAA Amendments, USEPA classifies air basins (or portions thereof) as in “attainment” or “nonattainment” for each criteria air pollutant, based on whether or not the NAAQS are achieved. The classification is determined by comparing monitoring data with State and Federal standards.</p> <ul style="list-style-type: none"> • An area is classified as in “attainment” for a pollutant if the pollutant concentration is lower than the standard. An area is classified as in “nonattainment” for a pollutant if the pollutant concentration exceeds the standard. • An area is designated “unclassified” for a pollutant if there are not enough data available for comparisons.
CA	California Clean Air Act of 1988	The CCAA requires all air districts in the State to endeavor to achieve and maintain State ambient air quality standards for O ₃ , CO, SO ₂ , NO ₂ , and PM; attainment plans for areas

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project		
	(CCAA) (Assembly Bill [AB] 2595)	that did not demonstrate attainment of State standards until after 1997 must specify emission reduction strategies and meet milestones to implement emission controls and achieve more healthful air quality. California's ambient air standards are generally stricter than national standards for the same pollutants; the State has also established standards for sulfates, hydrogen sulfide (H ₂ S), vinyl chloride, and visibility-reducing particles. The 1992 CCAA Amendments divide O ₃ nonattainment areas into four categories of pollutant levels (moderate, serious, severe, and extreme) to which progressively more stringent requirements apply.
CA	California Global Warming Solutions Act of 2006 (AB 32)	Under Assembly Bill [AB] 32, CARB is responsible for monitoring and reducing GHG emissions in the State and for establishing a statewide GHG emissions cap for 2020 that is based on 1990 emissions levels. CARB (2009) has adopted the AB 32 Climate Change Scoping Plan (Scoping Plan), which contains the main strategies for California to implement to reduce CO ₂ equivalent (CO ₂ e) emissions by 169 million metric tons (MMT) from the State's projected 2020 emissions level of 596 MMT CO ₂ e under a business-as-usual scenario. The Scoping Plan breaks down the amount of GHG emissions reductions the CARB recommends for each emissions sector of the State's GHG inventory, but does not directly discuss GHG emissions generated by construction activities.
CA	Senate Bill (SB) 97 and 375	<ul style="list-style-type: none"> Pursuant to SB 97, the State Office of Planning and Research prepared and the Natural Resources Agency adopted amendments to the State CEQA Guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions. Effective as of March 2010, the revisions to the CEQA Environmental Checklist Form (Appendix G) and the Energy Conservation Appendix (Appendix F) provide a framework to address global climate change impacts in the CEQA process; State CEQA Guidelines section 15064.4 was also added to provide an approach to assessing impacts from GHGs.
CA	Executive Orders (EOs)	<ul style="list-style-type: none"> Under EO S-01-07, which set forth a low carbon fuel standard for California, the carbon intensity of California's transportations fuels is to be reduced by at least 10 percent by 2020. EO S-3-05 established statewide GHG emission targets of reducing emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below the 1990 level by 2050.
CA	Other	<ul style="list-style-type: none"> Under California's Diesel Fuel Regulations, diesel fuel used in motor vehicles, except harbor craft, has been limited to 500 parts per million (ppm) sulfur since 1993. The sulfur limit was reduced to 15 ppm beginning September 1, 2006, and harbor craft were included starting in 2009. CARB's Heavy Duty Diesel Truck Idling Rule (Cal. Code Regs., tit. 13, § 2485) prohibits heavy-duty diesel trucks from idling for longer than 5 minutes at a time. Truck idling for longer than 5 minutes while queuing is allowed, however, provided the queue is located beyond 100 feet (30 meters) from any homes or schools. The Statewide Portable Equipment Registration Program (PERP) establishes a uniform program to regulate portable engines/engine-driven equipment units. Once registered in the PERP, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts.
3.6 Biology		
U.S.	Endangered Species Act (FESA) (7 USC 136, 16 USC 1531 et seq.)	<p>The FESA, which is administered in California by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS), provides protection to species listed as threatened or endangered, or proposed for listing as threatened or endangered. Section 9 prohibits the "take" of any member of a listed species.</p> <ul style="list-style-type: none"> Take is defined as "...to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

		<ul style="list-style-type: none"> • Harass is “an intentional or negligent act or omission that creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering.” • Harm is defined as “...significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering.” <p>When applicants are proposing projects with a Federal nexus that “may affect” a federally listed or proposed species, the Federal agency is required to consult with the USFWS or NMFS, as appropriate, under Section 7, which provides that each Federal agency must ensure that any actions authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of areas determined to be critical habitat.</p>
U.S.	Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 USC 1801 et seq.)	The MSA is the primary law governing marine fisheries management in U.S. Federal waters. The MSA was first enacted in 1976 and amended in 1996. Amendments to the 1996 MSA require the identification of Essential Fish Habitat (EFH) for federally managed species and the implementation of measures to conserve and enhance this habitat. Any project requiring Federal authorization, such as a USACE permit, is required to complete and submit an EFH Assessment with the application and either show that no significant impacts to the essential habitat of managed species are expected or identify mitigations to reduce those impacts. Under the MSA, Congress defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (16 USC 1802(10)). The EFH provisions of the MSA offer resource managers a means to heighten consideration of fish habitat in resource management. Pursuant to section 305(b)(2), Federal agencies shall consult with the NMFS regarding any action they authorize, fund, or undertake that might adversely affect EFH.
U.S.	Migratory Bird Treaty Act (MBTA) (16 USC 703-712)	The MBTA was enacted to ensure the protection of shared migratory bird resources. The MBTA prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase, or barter, of any migratory bird, their eggs, parts, and nests, except as authorized under a valid permit. The responsibilities of Federal agencies to protect migratory birds are set forth in EO 13186. The USFWS is the lead agency for migratory birds. The USFWS issues permits for takes of migratory birds for activities such as scientific research, education, and depredation control, but does not issue permits for incidental take of migratory birds.
U.S.	Other	<ul style="list-style-type: none"> • The Bald and Golden Eagle Protection Act makes it illegal to import, export, take (including molest or disturb), sell, purchase or barter any bald eagle or golden eagle or parts thereof. • Clean Water Act (33 USC 1251 et seq.) (See 3.3.8, Hydrology and Water Quality) • Executive Order 13112 requires Federal agencies to use authorities to prevent introduction of invasive species, respond to and control invasions in a cost-effective and environmentally sound manner, and to provide for restoration of native species and habitat conditions in ecosystems that have been invaded. • Rivers and Harbors Act (33 USC 401) (See 3.3.8, Hydrology and Water Quality)
CA	California Endangered Species Act (CESA) (Fish & G. Code, § 2050)	The CESA provides for the protection of rare, threatened, and endangered plants and animals, as recognized by the California Department of Fish and Wildlife (CDFW), and prohibits the taking of such species without its authorization. Furthermore, the CESA provides protection for those species that are designated as candidates for threatened or endangered listings. Under the CESA, the CDFW has the responsibility for maintaining

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

	et seq.)	a list of threatened species and endangered species (Fish & G. Code, § 2070). The CDFW also maintains a list of candidate species, which are species that the CDFW has formally noticed as under review for addition to the threatened or endangered species lists. The CDFW also maintains lists of Species of Special Concern that serve as watch lists. Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any State-listed endangered or threatened species may be present in the project site and determine whether the proposed project will have a potentially significant impact on such species. In addition, the CDFW encourages informal consultation on any proposed project that may affect a candidate species. The CESA also requires a permit to take a State-listed species through incidental or otherwise lawful activities (§ 2081, subd. (b)).
CA	Other relevant California Fish and Game Code sections	<ul style="list-style-type: none"> • The California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.) is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act includes provisions that prohibit the taking of listed rare or endangered plants from the wild and a salvage requirement for landowners. The Act directs the CDFW to establish criteria for determining what native plants are rare or endangered. Under section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. • The California Species Preservation Act (Fish & G. Code §§ 900-903) provides for the protection and enhancement of the amphibians, birds, fish, mammals, and reptiles of California. • Fish and Game Code sections 3503 & 3503.5 prohibit the taking and possession of native birds' nests and eggs from all forms of needless take. These regulations also provide that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nests or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto. • Fish and Game Code sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), & 5515 (fish) designate certain species as "fully protected." Fully protected species, or parts thereof, may not be taken or possessed at any time without permission by the CDFW. • Fish and Game Code section 3513 does not include statutory or regulatory mechanism for obtaining an incidental take permit for the loss of non-game, migratory birds.
CA	California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.)	This Act is intended to preserve, protect, and enhance endangered or rare native plants in California. This Act includes provisions that prohibit the taking of listed rare or endangered plants from the wild and a salvage requirement for landowners. The Act directs the CDFW to establish criteria for determining what native plants are rare or endangered. Under section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered.
3.7 Cultural Resources		
U.S.	Archaeological Resources Protection Act (ARPA)	<p>The ARPA states that archaeological resources on public or Indian lands are an accessible and irreplaceable part of the nation's heritage and:</p> <ul style="list-style-type: none"> • Establishes protection for archaeological resources to prevent loss and destruction due to uncontrolled excavations and pillaging;

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

		<ul style="list-style-type: none"> • Encourages increased cooperation and exchange of information between government authorities, the professional archaeological community, and private individuals having collections of archaeological resources prior to the enactment of this Act; • Establishes permit procedures to permit excavation or removal of archaeological resources (and associated activities) located on public or Indian land; and • Defines excavation, removal, damage, or other alteration or defacing of archaeological resources as a “prohibited act” and provides for criminal and monetary rewards to be paid to individuals furnishing information leading to the finding of a civil violation or conviction of a criminal violator. <p>ARPA has both enforcement and permitting components. The enforcement provision provides for the imposition of both criminal and civil penalties against violators of the Act. The ARPA's permitting component allows for recovery of certain artifacts consistent with the standards and requirements of the National Park Service (NPS) Federal Archeology Program.</p>
U.S.	National Historic Preservation Act (NHPA) (16 USC 470 et seq.)	This applies only to Federal undertakings. Archaeological resources are protected through the NHPA, as amended, and its implementing regulation, Protection of Historic Properties (36 CFR 800), the AHPA, and the ARPA. This Act presents a general policy of supporting and encouraging the preservation of prehistoric and historic resources for present and future generations by directing Federal agencies to assume responsibility for considering the historic resources in their activities. The State implements the NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), within the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level and advises Federal agencies regarding potential effects on historic properties. The OHP also maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State’s jurisdictions, including commenting on Federal undertakings.
U.S.	Federal Antiquities Act of 1906	<p>Paleontological resources are protected by several federal regulations applicable to excavations and construction on federal land, or to projects requiring a federal permit or entitlement. Although the project is not on federal lands, federal LORSs may nevertheless be applicable if a federal entitlement, such as a permit from the U.S. Army Corps of Engineers, is needed for Project implementation.</p> <p>Paleontological resources were first protected under the Federal Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225). This statute calls for the protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands.</p>
CA	California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.)	As the CEQA lead agency, CCRCD is responsible for complying with all provisions of the CEQA and State CEQA Guidelines that relate to “historical resources.” A historical resource includes: (1) a resource listed in, or eligible for listing in, the California Register of Historic Resources (CRHR); (2) a resource included in a local register of historical or identified as significant in an historical resource surveys; and (3) any resource that a lead agency determines to be historically significant for the purposes of CEQA, when supported by substantial evidence in light of the whole record. The CRHR was created to identify resources deemed worthy of preservation on a State level and was modeled closely after the National Register. The criteria, which are nearly identical to those of the National Register but focus on resources of statewide significance (see State CEQA

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

		Guidelines § 15064.5, subd. (a)(3)), are defined as any resource that meets any of the following criteria: (1) Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; (2) Is associated with lives of persons important in our past; (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (4) Has yielded, or may be likely to yield, information important in prehistory or history. Properties listed, or formally designated as eligible for listing, on the National Register are automatically listed on the CRHR, as are certain State Landmarks and Points of Interest. A lead agency is not precluded from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1, subdivision (j), or 5024.1 (State CEQA Guidelines § 15064.5, subd. (a)(4)). CEQA also requires public agencies and private interests to identify the environmental consequences of a project’s effect on “a unique paleontological resource or site”.
CA	Health and Safety Code § 7050.5	This code states that if human remains are exposed during construction, no further disturbance shall occur until the County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code section 5097.998. The Coroner has 24 hours to notify the Native American Heritage Commission (NAHC) if the remains are determined to be of Native American descent. The NAHC will contact most likely descendants, who may recommend how to proceed.
3.8 Geology and Soils		
U.S.	None applicable.	
CA	Alquist-Priolo Earth-quake Fault Zoning Act (Pub. Resources Code, §§ 2621-2630)	This Act requires that "sufficiently active" and "well-defined" earthquake fault zones be delineated by the State Geologist and prohibits locating structures for human occupancy across the trace of an active fault.
	California Building Code (CBC) (Cal. Code Regs., tit. 23)	The CBC contains requirements related to excavation, grading, and construction of pipelines alongside existing structures. A grading permit is required if more than 50 cubic yards of soil are moved. Sections 3301.2 and 3301.3 contain provisions requiring protection of the adjacent property during excavations and require a 10-day written notice and access agreements with the adjacent property owners.
3.9 Hazards and Hazardous Materials		
U.S.	Clean Water Act (CWA) (33 USC 1251 et seq.)	The CWA is comprehensive legislation (it generally includes reference to the Federal Water Pollution Control Act of 1972, its supplementation by the CWA of 1977, and amendments in 1981, 1987, and 1993) that seeks to protect the nation’s water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. (<i>see below and in Section 3.8, Hydrology and Water Resources</i>).
U.S.	California Toxics Rule (40 CFR 131)	In 2000, the USEPA promulgated numeric water quality criteria for priority toxic pollutants and other water quality standards provisions to be applied to waters in the State of California. USEPA promulgated this rule based on the Administrator's determination that the numeric criteria are necessary in the State of California to protect human health and the environment. (Under CWA section 303(c)(2)(B), the USEPA requires states to adopt numeric water quality criteria for priority toxic pollutants for which the USEPA has issued criteria guidance, and the presence or discharge of which could reasonably be expected to interfere with maintaining

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project		
		designated uses.) These Federal criteria are legally applicable in California for inland surface waters, enclosed bays, and estuaries.
U.S.	Hazardous Materials Transportation Act (HMTA) (49 USC 5901)	The HMTA delegates authority to the United States Department of Transportation (DOT) to develop and implement regulations pertaining to the transport of hazardous materials and hazardous wastes by all modes of transportation. Additionally, the USEPA's Hazardous Waste Manifest System is a set of forms, reports, and procedures for tracking hazardous waste from a generator's site to the disposal site. Applicable Federal regulations are contained primarily in CFR Titles 40 and 49.
U.S.	National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR 300)	Authorized under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 USC 9605, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99 through 499; and by CWA section 311(d), as amended by the Oil Pollution Act of 1990 (OPA), Pub. L. 101 through 380. The NCP outlines requirements for responding to both oil spills and releases of hazardous substances. It specifies compliance, but does not require the preparation of a written plan. It also provides a comprehensive system for reporting, spill containment, and cleanup. The United States Coast Guard (USCG) and USEPA co-chair the National Response Team. In accordance with 40 CFR 300.175, the USCG has responsibility for oversight of regional response for oil spills in "coastal zones," as described in 40 CFR 300.120.
U.S.	Oil Pollution Act (OPA) (33 USC 2712)	The OPA requires owners and operators of facilities that could cause substantial harm to the environment to prepare and submit plans for responding to worst-case discharges of oil and hazardous substances. The passage of the OPA motivated California to pass a more stringent spill response and recovery regulation and the creation of the Office of Spill Prevention and Response (OSPR) to review and regulate oil spill plans and contracts.
U.S.	Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.)	The RCRA authorizes the USEPA to control hazardous waste from "cradle-to-grave," which encompasses its generation, transportation, treatment, storage, and disposal. RCRA's Federal Hazardous and Solid Waste Amendments from 1984 include waste minimization and phasing out land disposal of hazardous waste as well as corrective action for releases. The Department of Toxic Substances Control (DTSC) is the lead State agency for corrective action associated with RCRA facility investigations and remediation.
U.S.	Other	<ul style="list-style-type: none"> Rivers and Harbors Act (33 USC 401) (See 3.3.8, Hydrology and Water Quality)
CA	Other	<ul style="list-style-type: none"> California Seismic Hazards Mapping Act (Pub. Resources Code, § 2690) and Seismic Hazards Mapping Regulations (Cal. Code Regs., tit. 14, Div. 2, Ch. 8, Art. 10) (See 3.3.6, Geology and Soils) The Hazardous Waste Control Act (Cal. Code Regs., tit. 26) defines requirements for proper management of hazardous materials. Porter-Cologne Water Quality Control Act (Cal. Water Code, § 13000 et seq.) (See 3.3.8, Hydrology and Water Quality)
3.10 Hydrology and Water Quality		
U.S.	Clean Water Act (CWA) (33 USC 1251 et seq.)	The CWA is a comprehensive piece of legislation that generally includes reference to the Federal Water Pollution Control Act of 1972, and its substantial supplementation by the CWA of 1977. Both Acts were subsequently amended in 1981, 1987, and 1993. Overall, the CWA seeks to protect the nation's water from pollution by setting water quality standards for surface water and by limiting the discharge of effluents into waters of the U.S. These water quality standards are promulgated by the USEPA and enforced in California by the State Water Resources Control Board (SWRCB) and nine Regional

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

		<p>Water Quality Control Boards (RWQCBs). CWA sections include:</p> <ul style="list-style-type: none"> • <u>State Water Quality Certification</u>. Section 401 (33 USC 1341) requires certification from the State or interstate water control agencies that a proposed water resources project is in compliance with established effluent limitations and water quality standards. U. S. Army Corps of Engineers (USACE) projects, as well as applicants for Federal permits or licenses are required to obtain this certification. • <u>National Pollution Discharge Elimination System (NPDES)</u>. Section 402 (33 USC 1342) establishes conditions and permitting for discharges of pollutants under the NPDES.
U.S.	Rivers and Harbors Act (33 USC 401)	<p>This Act governs specified activities in “navigable waters” (waters subject to the ebb and flow of the tide or that are presently used, have been used in the past, or may be susceptible for use to transport interstate or foreign commerce). Specifically, it limits the construction of structures and the discharge of fill into navigable waters of the U.S. Under section 14 of the Rivers and Harbors Act, the Secretary of the Army on the recommendation of the Chief of Engineers, may grant permission for the temporary occupation or use of any sea wall, bulkhead, jetty, dike, levee, wharf, pier or other work built by the United States. This permission will be granted by an appropriate real estate instrument in accordance with existing real estate regulations.</p>
CA	Porter-Cologne Water Quality Control Act (Cal. Water Code § 13000 et seq.) (Porter-Cologne)	<p>Porter-Cologne is the principal law governing water quality in California. The Act established the SWRCB and nine RWQCBs which have primary responsibility for protecting State water quality and the beneficial uses of State waters. Porter-Cologne also implements many provisions of the Federal CWA, such as the National Pollutant Discharge Elimination System (NPDES) permitting program. Pursuant to the CWA § 401, applicants for a Federal license or permit for activities that may result in any discharge to waters of the U. S. must seek a Water Quality Certification (Certification) from the State in which the discharge originates. Such Certification is based on a finding that the discharge will meet water quality standards and other appropriate requirements of State law. In California, RWQCBs issue or deny certification for discharges within their jurisdiction. The SWRCB has this responsibility where projects or activities affect waters in more than one RWQCB’s jurisdiction. If the SWRCB or a RWQCB imposes a condition on its Certification, those conditions must be included in the Federal permit or license.</p> <p>Statewide Water Quality Control Plans include: individual RWQCB Basin Plans; the California Ocean Plan; the San Francisco Bay/Sacramento-San Joaquin Delta Estuary Water Quality Control Plan (Bay-Delta Plan); the Water Quality Control Plan for Enclosed Bays and Estuaries of California; and the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan). These Plans contain enforceable standards for the various waters they address. For example:</p> <ul style="list-style-type: none"> • Basin Plan. Porter-Cologne (§ 13240) requires each RWQCB to formulate and adopt a Basin Plan for all areas within the Region. Each RWQCB must establish water quality objectives to ensure the reasonable protection of beneficial uses and a program of implementation for achieving water quality objectives within the basin plans. 40 CFR 131 requires each State to adopt water quality standards by designating water uses to be protected and adopting water quality criteria that protect the designated uses. In California, the beneficial uses and water quality objectives are the State’s water quality standards.

3.11 Land Use and Planning (NONE APPLICABLE)
3.12 Mineral Resources (NONE APPLICABLE)

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

3.13 Noise		
U.S.	Noise Control Act (42 USC 4910)	Required the USEPA to establish noise emission criteria, as well as noise testing methods (40 CFR Chapter 1, Subpart Q). These criteria generally apply to interstate rail carriers and to some types of construction and transportation equipment. The USEPA published a guideline (USEPA 1974) containing noise recommendations for acceptable noise level limits affecting residential land use of 55 dBA L _{dn} for outdoors and 45 dBA L _{dn} for indoors.
U.S.	Department of Housing and Urban Development Environmental Standards (24 CFR Part 51)	Sets forth the following exterior noise standards for new home construction (for interior noise levels, a goal of 45 dBA is set forth and attenuation requirements are geared to achieve that goal): <ul style="list-style-type: none"> ○ 65 L_{dn} or less – Acceptable ○ 65 L_{dn} and < 75 L_{dn} – Normally unacceptable, appropriate sound attenuation measures must be provided ○ > 75 L_{dn} – Unacceptable
U.S.	NTIS 550\9-74-004, 1974 (“Information on Levels of Environmental Noise Requisite to Protect Health and Welfare with an Adequate Margin of Safety”).	In response to a Federal mandate, the USEPA provided guidance in this document, commonly referenced as the, “Levels Document,” that establishes an L _{dn} of 55 dBA as the requisite level, with an adequate margin of safety, for areas of outdoor uses including residences and recreation areas. The USEPA recommendations contain a factor of safety and do not consider technical or economic feasibility (i.e., the document identifies safe levels of environmental noise exposure without consideration for achieving these levels or other potentially relevant considerations), and therefore should not be construed as standards or regulations.
CA	None applicable.	
3.14 Population and Housing (NONE APPLICABLE)		
3.15 Public Services		
U.S.	Code of Federal Regulations	<ul style="list-style-type: none"> ● Under 29 CFR 1910.38, whenever an Occupational Safety and Health Administration (OSHA) standard requires one, an employer must have an Emergency Action Plan that must be in writing, kept in the workplace, and available to employees for review. An employer with 10 or fewer employees may communicate the plan orally to employees. Minimum elements of an emergency action plan are: <ul style="list-style-type: none"> ○ Procedures for reporting a fire or other emergency; ○ Procedures for emergency evacuation, including type of evacuation and exit route assignments; ○ Procedures to be followed by employees who remain to operate critical plant operations before they evacuate; ○ Procedures to account for all employees after evacuation; ○ Procedures to be followed by employees performing rescue or medical duties; and ○ The name or job title of every employee who may be contacted by employees who need more information about the plan or an explanation of their duties under the plan. ● Under 29 CFR 1910.39, an employer must have a Fire Prevention Plan (FPP). A FPP must be in writing, be kept in the workplace, and be made available to employees for

Table 3-1. Federal (U.S.) and State (CA) Laws, Regulations, and Policies Potentially Applicable to the Project

		<p>review; an employer with 10 or fewer employees may communicate the plan orally to employees. Minimum elements of a FPP are:</p> <ul style="list-style-type: none"> ○ A list of all major fire hazards, proper hazardous material handling and storage procedures, potential ignition sources and their control, and the type of fire protection equipment necessary to control each major hazard; ○ Procedures to control accumulations of flammable and combustible waste materials; ○ Procedures for regular maintenance of safeguards installed on heat-producing equipment to prevent the accidental ignition of combustible materials; ○ The name or job title of employees responsible for maintaining equipment to prevent or control sources of ignition or fires; and ○ The name or job title of employees responsible for the control of fuel source hazards. ○ An employer must inform employees upon initial assignment to a job of the fire hazards to which they are exposed and must also review with each employee those parts of the FPP necessary for self-protection. <ul style="list-style-type: none"> ● Under 29 CFR 1910.155, Subpart L, Fire Protection, employers are required to place and keep in proper working order fire safety equipment within facilities. 																		
CA	California Code of Regulations	Under Title 19, Public Safety , the California State Fire Marshal (CSFM) develops regulations relating to fire and life safety. These regulations have been prepared and adopted to establish minimum standards for the prevention of fire and for protection of life and property against fire, explosion, and panic. The CSFM also adopts and administers regulations and standards necessary under the California Health and Safety Code to protect life and property.																		
3.16 Recreation (NONE APPLICABLE)																				
3.17 Transportation and Traffic																				
U.S.	None applicable.																			
CA	California Vehicle Code	Chapter 2, Article 3 of the Vehicle Code defines the powers and duties of the California Highway Patrol, which has enforcement responsibilities for the vehicle operation and highway use in the State.																		
3.18 Utilities and Service Systems (NONE APPLICABLE)																				
<p>Abbreviations used in this table (see also List of Abbreviations and Acronyms following the Table of Contents) include:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%;">AB = Assembly Bill</td> <td style="width: 50%;">RWQCB = Regional Water Quality Control Board</td> </tr> <tr> <td>CARB = California Air Resources Board</td> <td>SB = Senate Bill;</td> </tr> <tr> <td>CCRCD=Contra Costa Resource Conservation District</td> <td>SWRCB = State Water Resources Control Board</td> </tr> <tr> <td>CDFW = California Department of Fish and Wildlife</td> <td>USACE = U.S. Army Corps of Engineers</td> </tr> <tr> <td>CEQA = California Environmental Quality Act</td> <td>USC = U.S. Code</td> </tr> <tr> <td>CFR = Code of Federal Regulations</td> <td>USEPA = U.S. Environmental Protection Agency</td> </tr> <tr> <td>CWA = Clean Water Act</td> <td>USFWS = U.S. Fish and Wildlife Service</td> </tr> <tr> <td>EO = Executive Order</td> <td></td> </tr> <tr> <td>NMFS = National Marine Fisheries Service</td> <td></td> </tr> </table>			AB = Assembly Bill	RWQCB = Regional Water Quality Control Board	CARB = California Air Resources Board	SB = Senate Bill;	CCRCD=Contra Costa Resource Conservation District	SWRCB = State Water Resources Control Board	CDFW = California Department of Fish and Wildlife	USACE = U.S. Army Corps of Engineers	CEQA = California Environmental Quality Act	USC = U.S. Code	CFR = Code of Federal Regulations	USEPA = U.S. Environmental Protection Agency	CWA = Clean Water Act	USFWS = U.S. Fish and Wildlife Service	EO = Executive Order		NMFS = National Marine Fisheries Service	
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3.3 AESTHETICS

AESTHETICS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.3.1 Environmental Setting

Interstate 80 (I-80) passes over the project site and the construction would occur well below the I-80 grade. North of I-80, visibility to the site is from the AMC Pinole Valley Lanes Bowling Alley parking lot and the Flood Control District access road located on the east side of the Creek. On the west side of the Creek is open space with no immediate access. South of the site the Creek is partially visible behind Pinole Valley Shopping Center and the pathway on the west bank of the creek; however, the culvert itself is screened by extensive vegetation.

3.3.2 Regulatory Setting

There are no Federal and State laws and regulations pertaining to this issue area relevant to the Project area. Local goals, policies, and/or regulations applicable to this issue area are described below.

The Project area is located within an area designated as open space. The City recognizes Pinole Creek as one of its unique visual resources (City of Pinole 2010c, p. 10.0-13). The City’s General Plan has policies to conserve lands and protect visual and scenic landscapes (Policy OS.6.1 and SE 9.2) (City of Pinole 2010c).

3.3.3 Impact Analysis

a) *Have a substantial effect on a scenic vista?*

No Impact. Pinole Creek is not designated as a scenic vista.

b) Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway?

No Impact. No Federal, State or locally designated scenic routes or eligible scenic routes are located in, or near the Project area (Caltrans 2014 a,b,c). The proposed Project would thus have no impact on scenic resources including, but not limited to trees, rock outcroppings, and historic buildings within a State scenic highway corridor.

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The Project area is located in Contra Costa County, in the City of Pinole, immediately adjacent to and underneath Interstate 80. The adjacent areas are a mixture of commercial, open space, and residential areas. The majority of the work would occur within the creek and culvert; this area has limited visibility from adjacent areas. Taller construction equipment in the creek could be visible from areas including Interstate 80 and the southern parking area at the bowling alley. The more visible elements of project construction would be limited to a small staging area and an access route to the bottom of the creek on the downstream (northern) side of the culvert. The entire construction period, including mobilization and demobilization, would last about 10 weeks.

All permanent changes will be within keeping of the nature of the area. The new rock pool and chute may enhance the appearance of the creek immediately downstream of the culvert, and the proposed sill and training walls will be unobtrusive when viewed in conjunction with the culverts. Reseeding of the creek bank would occur after the construction as required by permits.

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less than Significant Impact. No new source of visual glare or substantial light would occur due to the proposed Project. There are no permanent lighting features associated with the Project. The work would be short-term, occurring over a 9- to 10-week period, and work hours would adhere to City's requirements and would be conducted between approximately 7:00AM and 5:00PM during weekdays unless other works hours are specifically approved by the City. No sources of substantial night-time lighting would be anticipated. There would be no work at night night-time lighting would be limited to security lights oriented to minimize glare. Security lighting would be employed once the work has shut down each day. As a result, any impacts associated with lighting in the area would be less than significant.

3.3.4 Mitigation Summary

The Project would not result in potentially significant impacts; therefore, no mitigation is required.

3.4 AGRICULTURE AND FOREST RESOURCES

AGRICULTURE AND FOREST RESOURCES ³ - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Natural Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.4.1 Environmental Setting

The increase in the Contra Costa County (County) population has resulted in the conversion of agricultural and forested lands to other land uses. The County’s land area totals 514,023 acres, 262,352 of which are allocated to farmlands and harvested cropland. The total acreage classified as agricultural land dropped by approximately 42,646 acres from 1984 to 2010 (DLRP 2010).

3.4.2 Regulatory Setting

There are no Federal and State laws and regulations pertaining to this issue area. Local goals, policies, and/or regulations applicable to this issue area are described below.

³ In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the State’s inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB).

The City of Pinole’s zoning map designates Pinole Creek as Open Space (OS), and the section of the Creek north of I-80 also as Planned Development (PD). There are no lands designated as Farmland under the Farmland Mapping and Monitoring Program or forested or timber lands as defined in Pub. Resources Code, § 12220, subd. (g)), timberland (as defined by Pub. Resources Code, § 4526), or timberland zoned Timberland Production (as defined by Gov. Code, § 51104, subd. (g)) on or in the immediate vicinity of the proposed Project.

The County passed Measure C in 1990 to preserve 65% of the County’s land as agricultural land, open space and other non-urban uses. The County developed the 65/35 Land Preservation Plan which became part of the General Plan and established Urban Limit Lines (ULL) for urban areas within the County. The City is within the ULL and therefore it allows for urban land uses to be established (Contra Costa County 2005).

3.4.3 Impact Analysis

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 Natural Resources Agency, to non-agricultural use?

No Impact. The Project would have no impact on Prime Farmland, Unique Farmland or Farmland of Statewide Importance because there are no current or planned agricultural uses at the site. The Project site is not classified as Farmland.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project would not conflict with existing zoning for agriculture because the site is designated as Open Space and Planned Development. The site is not operated under a Williamson Act contract with any local governments for the purpose of restricting specific parcels of land to agricultural or related open space use.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Pub. Resources Code § 12220, subd. (g)), timberland (as defined by Pub. Resources Code § 4526), or timberland zoned Timberland Production (as defined by Gov. Code § 51104, subd. (g))?

No Impact. No forest lands or timberlands are located in the vicinity of the site; therefore, there would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. No forest lands or timberlands are located in the vicinity of the site; therefore, there would be no impact.

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 into non-forest use?

No Impact. The Project would not alter the existing environment such that farmland or forest land would be converted to non-agricultural or non-forest uses.

3.4.4 Mitigation Summary

The Project would not result in potentially significant impacts; therefore, no mitigation is required.

3.5 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

AIR QUALITY AND GREENHOUSE GAS EMISSIONS– Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.5.1 Environmental Setting

Criteria air pollutants are a group of pollutants for which Federal or State regulatory agencies have adopted ambient air quality standards. The major criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and particulate matter (both PM₁₀ and PM_{2.5}). Most of the criteria pollutants are directly emitted. Ozone, however, is a secondary pollutant that is formed in the atmosphere by chemical reactions between oxides of nitrogen (NO_x) and reactive organic gases (ROG). Many other chemical compounds, generally termed toxic air contaminants (TACs), pose a present or potential hazard to human health through airborne exposure. Diesel particulate matter (DPM), the PM₁₀ and PM_{2.5} emitted by diesel engines, accounts for more than 80 percent of the inhalation cancer risk from TACs in the Bay Area, and is one of the TACs of greatest concern statewide.

Sensitive Receptors

People that are more susceptible to the effects of air pollution within the general population, deemed ‘sensitive receptors’, include children, the elderly, and those that suffer from certain

illnesses or disabilities. Therefore, schools, convalescent homes, and hospitals are considered to be typical locations of sensitive receptors. Residential areas are also considered sensitive receptors because people (including children, the elderly and the sick) usually stay home for extended periods of time, which results in greater exposure to localized air pollutants. Recreational uses are also considered sensitive due to the greater exposure to ambient air quality conditions because vigorous exercise associated with recreation places a high demand on the human respiratory system.

The closest residences to the active project work area (i.e., where soil disturbance and/or concrete work could occur) are 200 feet to the south, and west of Pinole Creek on Sarah Court. A child care center is located approximately 1,000 feet north of the north edge of the active work area, and the southern-most portion of Collins Elementary School is located approximately 0.26 miles north of the northern edge of the active work area. Staging of equipment and materials may occur as close as 250 feet from the child care center and within 500 feet of the elementary school; no soil disturbance is expected within the work area. Nuisance water (groundwater and other water seeping into the active work area) may be used to water a grassy area located approximately 500 feet south of the childcare center and 800 feet south of the southern edge of the elementary school. With the exception of the access into the creek, all active work would occur either within the culvert or in the bottom of the creek, which is approximately 10 feet below the adjacent ground surface (Michael Love 2013b). BAAQMD considers the relevant zone of influence for an assessment of air quality health risks in a CEQA study to be within 1,000 feet of a project site.

Greenhouse Gas Emissions and Climate Change

Greenhouse gases (GHGs) are atmospheric gases that capture and retain a portion of the heat radiated from the earth after it has been heated by the sun. The primary GHGs are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), ozone, and water vapor. While GHGs are natural components of the atmosphere, CO₂, CH₄, and N₂O are also emitted in considerable quantities from human activities and their accumulation in the atmosphere over the past 200 years has substantially increased their concentrations. This accumulation of GHGs has been implicated as the driving force behind global climate change. Human emissions of CO₂ and N₂O are largely by-products of fossil fuel combustion, whereas methane results from off-gassing associated with organic decay processes in agriculture, landfills, etc. Other GHGs, including hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, are generated by certain industrial processes.

CO₂ is the most common reference gas for climate change. To account for the warming potential of GHGs, GHG emissions are often quantified and reported as CO₂ equivalents (CO₂e). With the warming potential of CO₂ set at a reference value of 1, methane has a warming potential of 21 [i.e., one ton of methane has the same warming potential as 21 tons of CO₂ (USEPA 2013a,b)], while N₂O has a warming potential of 310. There is widespread international scientific consensus that human-caused increases in GHGs have and will continue to contribute to climate change, although there is uncertainty concerning the magnitude and rate of the warming.

Climate change is having widespread impacts on California's economy and environment, and will continue to affect communities across the state in the future. Many impacts - increased fires, floods, severe storms and heat waves - are occurring already (CCCP 2014). Documented effects of climate change in California include increased average, maximum, and minimum temperatures; decreased spring run-off to the Sacramento River; shrinking glaciers in the Sierra Nevada; a 7-inch rise in sea level at the Golden Gate Bridge; warmer temperatures in major lakes such Lake Tahoe, Clear Lake, and Mono Lake; and changes in elevations for plant and animal species (OEHHA 2013).

The San Francisco Bay Area as a whole emitted an estimated 95.8 million metric tons of CO₂e in 2007 (BAAQMD 2010), and the estimated emissions in unincorporated County were 1,667,070 MT of CO₂e in 2005 (Contra Costa County 2012).

As shown in the City's General Plan (City of Pinole 2010), the City of Pinole emitted approximately 157,619 metric tons of CO₂e in the baseline year 2005. The transportation sector was by far the largest contributor 72 percent of (approximately 113,452 metric tons) of CO₂e in 2005. Emissions from the residential sector contributed an estimated 16.8 percent, the commercial and industrial sectors accounted for a combined 8.4 percent of the total and emissions from solid waste comprised 2.8 percent of the total. The majority of emissions from the transportation sector were the result of gasoline consumption in private vehicles traveling on local roads and on Interstate 80). The inventory methodology used was consistent with the Bay Area Air Quality Management District (BAAQMD) *GHG Plan Level Quantification Guidance* dated April 15, 2010.

In December 2012, Contra Costa County released a Draft Climate Action Plan for the unincorporated parts of the County for public review and comment. This Draft Climate Action Plan identifies specific measures on how the County can achieve a GHG reduction target of 15% below baseline levels by the year 2020. In addition to reducing GHG, the Draft Climate Action Plan includes proposed policies and actions to improve public health and provide additional community benefits, and it lays the groundwork for achieving long-term greenhouse reduction goals for 2020 and 2035 (Contra Costa County 2012).

3.5.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The BAAQMD's *CEQA Air Quality Guidelines* (May 2012) were used to assess the regional and local significance of the project's construction-related emissions of criteria pollutants and the exposure of local sensitive receptors to TACs in the construction equipment exhaust. The *Guidelines* specify that a project generating more than 54 pounds per day of ROG, NO_x or PM_{2.5}, or more than 82 pounds per day of PM₁₀, is deemed to have a significant impact on the Bay

Area’s regional air quality (see Table 3.5-1).⁴ The *Guidelines* also recommend the evaluation of the health risks of project TACs or PM_{2.5} impacting any local sensitive receptors within 1,000 feet of the project site.

Table 3.5-1. BAAQMD CEQA Air Quality and Climate Change Thresholds of Significance

Criteria Air Pollutants and Precursors	Construction-Related	Operational-Related	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Maximum Annual Emissions (tons/year)
ROG	54	54	10
NO _x	54	54	10
PM ₁₀ (equipment exhaust)	82	82	15
PM _{2.5} (equipment exhaust)	54	54	10
PM ₁₀ /PM _{2.5} (fugitive dust)	Best Management Practices	None	
CO (local concentration)	None	9.0 ppm (8-hour average) 20.0 ppm (1-hour average)	
Greenhouse Gases for Climate Change Analysis	None	Compliance with Qualified GHG Reduction Strategy OR 1,100 MT of CO ₂ e/yr OR 4.6 MT CO ₂ e/SP/yr (residents+employees)	
Risks and Hazards for New Sources and Receptors (Individual Project)	Same as Operational Thresholds	Compliance with Qualified Community Risk Reduction Plan or Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (HI) (Chronic or Acute) Ambient PM _{2.5} increase: > 0.3 µg/m ³ annual average <u>Zone of Influence</u> : 1,000-foot radius from fence line of source or receptor	

⁴ This analysis of air quality impacts relies on CEQA Thresholds of Significance from BAAQMD’s May 2011 *Guidelines*. While the Alameda Superior Court ordered BAAQMD to set aside these Thresholds and not disseminate them as officially sanctioned air quality thresholds until a CEQA review is conducted, the Court did not rule that the Thresholds lacked substantial evidence to support them or that they were substantively flawed or scientifically unsound. Rather, it simply held that BAAQMD is required to conduct further environmental review of the Thresholds before it can readopt them. Accordingly, the basis for using the Thresholds remains valid in the view of the Lead Agency and use of the threshold is supported by substantial evidence.

Table 3.5-1. BAAQMD CEQA Air Quality and Climate Change Thresholds of Significance

Criteria Air Pollutants and Precursors	Construction-Related	Operational-Related	
	Average Daily Emissions (lbs./day)	Average Daily Emissions (lbs./day)	Maximum Annual Emissions (tons/year)
Risks and Hazards for New Sources and Receptors (Cumulative Threshold)	Same as Operational Thresholds	Compliance with Qualified Community Risk Reduction Plan or Increased cancer risk of >100 in a million (from all local sources) Increased non-cancer risk of > 10 Hazard Index (HI) (from all local sources) (Chronic) Ambient PM _{2.5} increase: > 0.8 µg/m ³ annual average (from all local sources) <u>Zone of Influence:</u> 1,000-foot radius from fence line of source or receptor	
Acutely Hazardous Air Pollutants (Accidental Release)	None	Storage or use of acutely hazardous materials near sensitive receptors or locating sensitive receptors near stored or used acutely hazardous materials are considered significant	
Odors	None	Complaint History—5 confirmed complaints per year averaged over three years	
Source: California Environmental Quality Act Air Quality Guidelines, BAAQMD, updated May 2011.			

The San Francisco Bay Area as a whole does not have a Climate Action Plan. BAAQMD adopted a resolution in 2005 establishing a Climate Protection Program and acknowledging the link between climate protection and programs to reduce air pollution in the Bay Area, and formed a standing committee on climate protection to provide direction on BAAQMD’s climate protection activities. BAAQMD focus is to integrate climate protection activities into existing BAAQMD programs (BAAQMD 2013b). Instead, Climate Action Plans are prepared by local governments. A Draft Climate Action Plan exists for unincorporated County. The City does not have a Climate Action Plan.

The BAAQMD’s *CEQA Air Quality Guidelines* provide CEQA thresholds of significance for project operational GHG emissions, but not for construction GHG emissions. The *Guidelines* methodology and thresholds of significance have been used in this Initial Study’s analysis of potential GHG impacts.

The City of Pinole General Plan also has goals and policies applicable to air quality and greenhouse gases. The goals and policies potentially applicable to this project include:

- GOAL SE.7: Air Quality will be maintained and improved for the City of Pinole and the Bay Area as a region and not decline below levels measured in the early 1990’s.

- POLICY HS.6.2: Reduce greenhouse gas emissions.
- POLICY SE.3.1: Reduce greenhouse gas emissions from City operations and community sources by a minimum of 15 percent below current or baseline levels by the year 2020.
- POLICY SE.3.4: Reduce GHG emissions by reducing vehicle miles traveled and by increasing or encouraging the use of alternative fuels and transportation technologies.
- POLICY SE.7.1: Continue working with the Bay Area Air Quality Management District and other regional agencies to:
 1. Improve air quality through pollution prevention methods.
 2. Ensure enforcement of air emission standards.
 3. Reduce local and regional traffic (the single largest source of air pollution in the city) and support public transit improvements.
 4. Promote regional air pollution prevention plans for business and industry.
 5. Promote strategies to reduce particulate pollution from residential fireplaces and wood-burning stoves.
 6. Locate parking appropriately and provide adequate signage to reduce unnecessary “circling” and searching for parking.
 7. Promote anti-idling policies and programs.

In addition, Action SE.7.1.1 calls for applying BAAQMD-approved criteria air pollutant reducing *Basic Construction Mitigation Measures* to all future construction projects within the Planning Area where feasible, whether or not construction-related emissions exceed applicable thresholds of significance. These best management practices have been incorporated into the Project Description as construction BMP 9 (see Table 2-1).

3.5.3 Impact Analysis

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less than Significant Impact. As described in Section 2, the proposed Project would use a variety of construction equipment to construct the Project features. The proposed Project’s purpose would be to construct fish passage improvements (as described in Section 2) along Pinole Creek at a culvert crossing beneath Interstate 80 (I-80) in Contra Costa County, California for the purpose of improving fish migration and access to upstream spawning and rearing habitat. The total Project construction time would be about 9 to 10 weeks. As such, the Project would not have regionally significant impacts impeding the implementation of the control strategies or the attainment of goals set in BAAQMD’s *Clean Air Plan*. Further, the proposed Project does not have the potential to substantially affect housing, employment, and/or population projections within the Bay Area Air Basin. Finally, ROG, NOx and PM emissions generated during construction of the proposed Project would be less than BAAQMD CEQA significance thresholds (see discussion in Item c below. Estimated Project emissions during all phases of the work are well below (25% or less of) the screening thresholds set by BAAQMD.

Therefore, the Project's impact on the implementation of air quality plans is less than significant.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Less than Significant Impact. In order to limit the generation of fugitive dust, with consequent exposure of local sensitive receptors to elevated PM₁₀ and PM_{2.5} levels during construction, BAAQMD requires the implementation of best management practices (BMPs). Applicable BMPs have been integrated into the Project. Due to the nature of the construction activities and the site location, there is only a small potential for fugitive dust generation. Daily Project emissions of all criteria pollutants are well below BAAQMD thresholds; consequently, this impact is less than significant.

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)?

Less than Significant Impact. The Project would not create any new permanent stationary or non-stationary source of air emissions as defined by BAAQMD guidelines. As such, the Project is not subject to the thresholds of significance that apply to operational impacts created by new permanent sources, and is, therefore, evaluated in the context of construction-related impacts only. Project construction activities would produce air pollutant emissions from the following sources: 1) exhaust from diesel-powered construction equipment; 2) fugitive dust (which includes (PM₁₀ and PM_{2.5}) generated by earthmoving, excavation, grading and other construction activities; and 3) exhaust from fill transport trucks and from construction worker commute vehicles. Such emissions from construction activities on-site and off-site would vary daily as equipment use and activity levels change over the construction period. A detailed estimate of the proposed Project's emissions from construction equipment, fill trucks and worker vehicles was developed based on the projected Project construction process (Michael Love Pers. Comm. 2014a), as summarized in the table below. No BAAQMD emission thresholds would be exceeded. The amount of fugitive dust produced by on-site construction activities was not quantified; this potential impact would be adequately mitigated by the application of the basic dust-suppression and pollutant-reduction measures required by BAAQMD. Thus, the Project's individual and cumulative impacts on regional air quality would be less than significant.

Table 3.5-2. Estimated Construction Emissions

Construction Task	Construction Emissions (lbs./workday)			
	ROG	NOx	PM10	PM2.5
Site Preparation	0.2	2.8	0.1	0.1
Training Wall and Sill Construction/Fishway Notch Construction	0.6	5.4	0.3	0.3
ESM and RSP Installation (including delivery of materials)	1.1	12.7	0.5	0.5
Site Restoration and Demobilization	0.2	1.5	0.1	0.1
<i>BAAQMD CEQA Significance Criterion (lbs./workday)</i>	<i>54</i>	<i>54</i>	<i>82</i>	<i>54</i>
Significant Impact?	No	No	No	No

d) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant Impact. Exposures to TACs from Project construction activities were evaluated for the closest off-site sensitive receptors to the site, specifically the residential uses just south of the Project construction activity area south of I-80. Using the SCREEN3 air dispersion model, receptor concentrations were estimated and excess lifetime cancer risks, non-cancer hazard indexes and PM2.5 concentrations were calculated using the TAC emission rates associated with Project construction. These risks were then compared to the significance thresholds identified in the BAAQMD CEQA Guidelines. Results of the health risk assessment indicate that the highest incremental cancer risks for residents closest to the Project site based on the maximum ground-level TAC concentrations for the two-month outdoor exposure during construction are less than one per million and, therefore, less than the significance threshold of 10 per million. For non-carcinogenic effects, the hazard index is less than one and, therefore, within acceptable limits, and the PM2.5 annual concentrations would be below the BAAQMD 0.3 µg/m³ significance thresholds. The results are summarized in the table below.

Table 3.5-3. Health Risk Assessment Results

Receptor	Cancer Risk	Hazard Index	PM _{2.5}	
Closest Residential	0.3	0.05	0.2 ug/m ³	
BAAQMD Project-Level Threshold	10	1.0	0.3 ug/m ³	
Exceeds Threshold	No	No	No	

Sources: Screen View, Lakes Environmental, Version 3.5.0 of the EPA’s SCREEN3 air dispersion model. BAAQMD, *Recommended Methods for Screening and Modeling Local Risks and Hazards*. May 2011; OEHHA, *Air Toxics Hot Spots Program Risk Assessment Guidelines*. August 2003.

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

Less than Significant Impact. Some of the sediments in the bottom of the creek channel would be disturbed during construction, and temporary dewatering would occur. This could result in odors from the exposed sediment. Because the amount of sediment that could be disturbed is small, the area potentially affected is limited, and the disturbance would occur in the creek bed, this potential impact is considered less than significant.

f) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less than Significant Impact. The proposed Project would generate an estimated 17.5 metric tons (MT) of CO₂e from direct emissions (see Appendix B, Criteria Air Pollutant and Greenhouse Gas Emissions Estimates). Because construction emissions would be short-term and would cease upon completion, GHG from construction activities would not substantially contribute to the global GHG emissions burden. The proposed Project would minimize overall emissions by minimizing idling times, reuse and recycling soil and concrete as feasible, and ensuring that all equipment used on the proposed Project is kept in good working order.

g) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant Impact. Although the BAAQMD has adopted 1,100 metric ton/year as a greenhouse gas (GHG) operational emissions significance criterion for development projects, there is no similar adopted threshold for Project construction emissions. Construction of the proposed Project would generate about 17.5 metric tons of GHG during its 9- to 10-week construction phase. This is an extremely small value compared to the 95.8 million MT released within the Bay Area in 2008 (BAAQMD 2010). Additionally, this is a routine wildlife habitat improvement Project that would not conflict with any County or State policy to reduce GHG emissions.

3.5.4 Mitigation Summary

The Project as designed would not result in significant impacts; therefore, no mitigation is required.

3.6 BIOLOGICAL RESOURCES

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

3.6.1 Environmental Setting

Pinole Creek has a 15.3 square mile watershed extending from the creek headwaters at Briones Hills to San Pablo Bay north of Point Pinole. The upper and middle thirds of the Pinole Creek watershed are protected lands and are sparsely developed. The lower third of the Pinole Creek watershed, where the Project site is located, is urbanized. Pinole Creek has supported a self-sustaining population of central California coastal steelhead ESU over the past several decades. A list of special status wildlife and plant species in the region is included in Appendix C (Pacific Biology 2014). Pinole Creek has no major water diversions; the most significant barrier to the migration of steelhead is located at the Project site (EBMUD 2009). A primary goal of the Project is to minimize this constraint and thereby improve access to desirable steelhead habitat upstream of the culvert.

Dense urban development occurs downstream and upstream of the Project site. Pinole Creek has been highly altered within the Project area. Downstream of the culvert the aquatic habitat is highly altered due to modification of the channel for flood control, and rip-rap occurs within the creek channel within and immediately downstream of the Project area. The creek channel has been described as a riffle through rip-rap, with a shallow pool occurring just downstream of the Project site (Pacific Biology 2014). Within the creek channel, there is no riparian cover (i.e., no shading) and the vegetation is largely restricted to scattered pockets of cattails (*Typha latifolia*). Watercress (*Nasturtium officinale*) also occurs in the channel, just downstream of the culverts. Creek bed materials consist of silt and embedded gravel, cobble, and small boulders (Pacific Biology 2014).

The east creek bank downstream of the culvert has a moderate slope; the west creek bank has a steep slope. Portions of the banks contain rip-rap. The lower creek banks contain a mix of wetland-associated plants (facultative wetland species) and plants sometimes associated with wetlands (facultative species) that are characteristic of disturbed areas, including cocklebur (*Xanthium strumarium*), nutsedge (*Cyperus eragrostis*), horsetail (*Equisetum arvense*), clustered dock (*Rumex conglomeratus*), mugwort (*Artemisia douglasiana*), and poison hemlock (*Conium maculatum*). The upper creek banks are dominated by non-native plant species and annual grasses, such as ripgut brome (*Bromus diandrus*), Bermuda grass (*Cynodon dactylon*), harding grass (*Phalaris aquatica*), Himalayan blackberry (*Rubus armeniacus*), Italian thistle (*Carduus pycnocephalus*), and bristly ox-tongue (*Picris echioides*). Salt grass (*Distichlis spicata*) is also present (Pacific Biology 2014).

The channel immediately upstream of the culvert is also altered but has more extensive riparian vegetation. There is a large, approximately 4-6 feet deep pool just upstream of the southern culvert's concrete apron. The pool is shaded by native riparian tree species including arroyo willow (*Salix lasiolepis*) and red willow (*Salix laevigata*). There is also a large cluster of invasive pampas grass (*Cortaderia jubata*) on the creek bank. A sediment deposit has formed on the east side of the concrete apron and supports wetland-associated vegetation such as marsh mint (*Mentha arvensis*), cattails, and a small arroyo willow sapling (diameter less than 1 inch) (Pacific Biology 2014).

The Creek supports populations of native fish including California roach, three-spined stickleback, Sacramento sucker, and Prickly sculpin. Benthic surveys of the upper reaches of Pinole Creek have been undertaken and show benthic organisms at densities suitable for salmonid food source (EBMUD 2009). The benthic communities in the lower part of the watershed are relative low (Hagar & Pacific Biology 2009).

Within the culvert, numerous inactive cliff swallow (*Petrochelidon pyrrhonota*) nests were present in the eastern half of the culvert and an inactive black phoebe (*Sayornis nigricans*) nest was present in the western half of the culvert (Pacific Biology 2014).

The potential temporary water reuse area, an undeveloped lot immediately north of the bowling alley parking lot (Figure 3), is in a disturbed condition and is dominated by non-native

grasses and weedy plant species, including wild oat, bristly ox-tongue, mustard, and stinkwort (*Dittrichia graveolens*). Coyote brush (*Baccharis pilularis*), a native shrub commonly occurring in disturbed areas, also occurs in low numbers. There are no wetlands or sensitive habitats present in this area (Pacific Biology 2014).

Wetlands

A total of 0.15 acre of waters of the State, including 0.06 acre of wetlands and 0.09 acre of other waters, was identified below the ordinary high water mark (OHWM) and within the proposed limits of grading (Figure 7). All wetlands within the limits of grading are seasonal freshwater wetlands and all other waters were associated with Pinole Creek.

The OHWM was mapped in the field based on vegetation; wetlands and other waters were mapped using aerial photography, and include all vegetated area between the OHWM and within the limits of grading (Pacific Biology 2014). Although a formal wetland delineation of the Project site was not completed, the approach used to map potential wetland habitats was conservative in that large polygons were drawn around all vegetated areas within the disturbance footprint that exhibited wetland vegetation characteristics (Lux Environmental Consulting 2014).

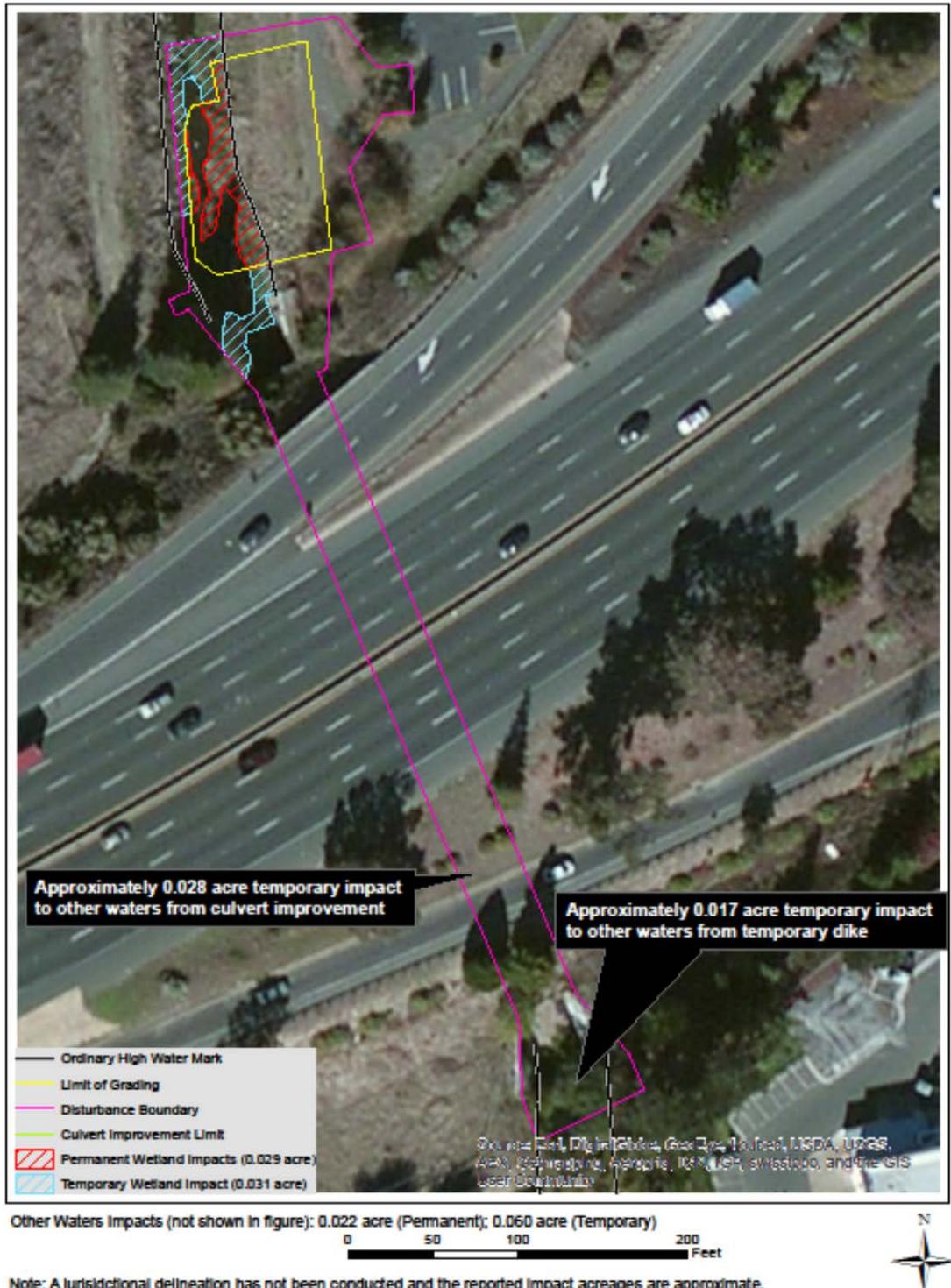
Special Status Species

Special status wildlife and fish species have the potential to occur or are known to occur at the Project site. The following special-status wildlife species have the potential to occur at the Project site: California red-legged frog (*Rana draytonii*), Cooper's hawk (*Accipiter cooperi*), White-tailed kite (*Elanus leucurus*), and western pond turtle (*Actinemys marmorata*), and central California coastal steelhead ESU/Rainbow trout (*Oncorhynchus mykiss*) (Appendix C).

Central California Coast Steelhead ESU/Rainbow Trout

Central California Coast Steelhead ESU (*Oncorhynchus mykiss*), is a federally threatened species. Steelhead are the anadromous form of *O. mykiss* and rainbow trout are the resident freshwater form. Recent surveys have shown both rainbow trout and steelhead in Pinole Creek (EBMUD 2009). *O. mykiss* have a highly flexible life history and may follow a variety of life-history patterns including freshwater residents (non-migratory) at one extreme and individuals that migrate to the open ocean (anadromous) at another extreme. Intermediate life-history patterns include fish that migrate within the stream, fish that migrate only as far as estuarine habitat, and fish that migrate to near-shore ocean areas. California winter-run steelhead enter coastal streams during December-March (Pacific Biology 2014) and spawn upstream. After spawning, spent steelhead often move gradually downstream and occupy pools for periods of time during the downstream migration (Pacific Biology 2014). Unlike other Pacific salmonids, they can spawn more than one time.

Analysis of the I-80 culvert indicates that it would be a near-total barrier to the upward migration of steelhead, thereby limiting steelhead range into the watershed. Nonetheless, it is



Note: A jurisdictional delineation has not been conducted and the reported impact acreages are approximate. The methodology included mapping the OHWM in the field, but wetlands and other waters were identified only by interpreting available aerial photography.

Source: Pacific Biology 20140514

FIGURE 7
APPROXIMATE AREA OF WETLANDS AFFECTED

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likely that a few fish get past the existing structure under certain flow conditions (EBMUD 2009).

California Red-legged Frog

California red-legged frog (*Rana draytonii*) is known to occur in Pinole Creek and has been documented approximately 3 miles upstream of the Project site, at a location just outside of the Pinole city limits. Although the species has not been documented on or within 3 miles of the Project site, there are no barriers to dispersal from upstream locations and suitable habitat occurs on and near the Project site. The large pool upstream of the culvert appears to provide suitable habitat for the species, given the presence of deep perennial water, vegetative cover, and upland areas to escape high flows. The portions of the Project site downstream of the culvert provide less suitable habitat but if CRLF were present in the area, individual frogs could still potentially occur within the Project site (Pacific Biology 2014).

Western Pond Turtle

Western pond turtle (*Actinemys marmorata*) is a California Species of Special Concern. This turtle primarily inhabits aquatic habitats, including ponds, slow moving streams, lakes, marshes, and canals. The species is known to occur in Pinole Creek, approximately 3 miles upstream of the Project site. The species frequently basks on logs or other objects out of the water. Western pond turtle is an aquatic species, but also requires upland egg-laying sites in the vicinity (typically within 600 feet, but as far as 1,200 feet) of the aquatic site. Mating typically occurs in late April or early May and most egg-laying occurs during May and June, although some individuals may deposit eggs as early as late April and as late as early August (Pacific Biology 2014).

Special-Status Bird Species, Bald and/or Golden Eagles and Native Bird Species

Special-status bird species could nest in areas bordering the Project site. The nearby riparian habitat provides potential nesting habitat for species such as Cooper's hawk (*Accipiter cooperii*), and trees near the undeveloped hillside north of culvert provide potential nesting habitat for species such as white-tailed kite (*Elanus leucurus*). Bald or golden eagles are not known to occur in the Project area and suitable habitat (large open water areas, tall trees) do not occur within or adjacent to the Project footprint.

In addition, the active nests of most native bird species are protected by the Migratory Bird Treaty Act (16 U.S.C. 704) and the California Fish and Game Code (Section 3503). Cliff swallows and black phoebe have nested in the culverts, and the culverts are likely to be used by these species during the nesting season. Cliff swallows are a migratory species that would only occur in the Project area during the spring and summer. Egg-laying may start as early as late March and nesting can extend into August (Pacific Biology 2014).

Special Status Plant Species

As shown in Figure 2, the Project's grading footprint is restricted to heavily disturbed creek banks and the creek channel. The creek banks support a dense growth of weedy vegetation characteristic of disturbed habitats. The extent and density of weedy vegetation and the

absence of habitat conditions associated with local rare plant occurrences, special-status plant species would not be expected to occur within the Project site (Pacific Biology 2014). The special-status species, Santa Cruz tarplant, Diablo helianthella, and soft bird's-beak have been documented in surrounding areas but not at the Project site (Pacific Biology 2014).

3.6.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

Part of the City of Pinole's General Plan vision is to "seek support for the ongoing efforts to restore Pinole Creek" (City of Pinole 2010). The General Plan includes goals and policies to protect and enhance Pinole Creek including the following policies pertinent to the Project:

- Policy CC2.2: Preserve natural resource within the build environment, including trees, marshes, creeks, and hillsides.
- Policy LU. 5.3: retain the Open Space designation to protect the resources and recreation values of Pinole Creek.
- Policy LU. 8.2: ...enhance Pinole Creek, a natural amenity that supports wildlife and a trail system...
- Policy HS.2.1: Implement the Pinole Creek Watershed Vision Plan, Greenway Master Plan (near the mouth of Pinole Creek along San Pablo Bay), and the Restoration Project (near the mouth of Pinole Creek along San Pablo Bay).
- Action Item OS.2.4.1: Continue implementing the Pinole Creek Watershed Vision Plan and pursue related riparian and stream restoration programs.
- Action Item OS. 3.6.1: Continue to employ mitigations to reduce potential impacts to wetlands to a less than significant level.
- Policy OS.3.8. Protect Listed and Non-listed Special-status species. Limit development in areas which support listed and non-listed special-status species. If development of these areas must occur, any loss of habitat should be fully compensated on-site. If off-mitigation is necessary, it should occur within the Pinole planning area whenever possible, and must be accompanied by plans and a monitoring program prepared by a qualified biologist.

The Pinole Creek Watershed Vision Plan calls for the restoration of habitat for native fish and wildlife species by modifying "culverts and other structures as necessary to provide for fish passage (e.g., I-80 culvert)" (Urban Creeks Council and RDG 2004). There is no county Habitat Conservation Plan that includes the City of Pinole.

3.6.3 Impact Analysis

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 CDFW or USFWS?

Less than Significant Impact. The proposed Project would result in short-term disturbance of the creek habitat during construction. This disturbance in the streambed and on the banks would include grading, earthwork, and removal of existing rip-rap. In addition, concrete would be removed from the culvert to accommodate the fishway notch. Heavy equipment moving in and out of the creek; concrete placement; and dewatering activities could also disturb existing habitat. These impacts are expected to occur over the approximately 9- to 10-week construction period. The avoidance and minimization measures described in the Project Description would be implemented to minimize impacts to steelhead and other special status species during construction activities. The biological evaluation for the Project determined that the implementation of these measures would minimize harm to the species during construction (Pacific Biology 2014).

The following special-status wildlife species have potential to occur at the Project site: California red-legged frog (*Rana draytonii*), Cooper's hawk (*Accipiter cooperi*), White-tailed kite (*Elanus leucurus*), and western pond turtle (*Actinemys marmorata*), and central California coastal steelhead ESU/Rainbow trout (*Oncorhynchus mykiss*). *O. mykiss* may be anadromous or resident fish. A more detailed discussion of the special-status species follows.

California Red-legged Frog

As described in the Project Description, the proposed Project would be constructed during the dry season (i.e., June 15 - October 15) and it is not expected that CRLF egg masses would be present at this time. In the long-term, it is not expected that the proposed Project would adversely affect potential CRLF habitat. As described in the Project Description, a temporary earthen dike may be installed at the northern edge of the large pool upstream of the culvert. If this were to occur, the site would be surveyed to determine if CRLF are present and appropriate measures taken to protect the species, consistent with the USFWS Programmatic Biological Opinion for Projects that May Affect the Threatened California Red-legged Frog in Nine San Francisco Bay Area Counties (USFWS 2014). The earthen dike would be removed upon Project completion, thus restoring the creek bed (and pool) to its existing condition.

The proposed culvert improvements could also improve opportunities for frog passage through the culvert (Pacific Biology 2014). Measures have been included in the Project Description to minimize or avoid impacts to CRLF and with implementation of these measures the potential impact to California red-legged frog is expected to be less than significant.

Western Pond Turtle

The species has not been documented on or within 3 miles of the Project site, there are no barriers to dispersal from upstream locations, and suitable habitat occurs on and near the

Project site. In particular, the large pool just upstream of the culvert provides potential pond turtle habitat (Pacific Biology 2014). As described in the Project Description, measures have been included to minimize or avoid impacts to the turtle, including a pre-construction survey and possible relocation of Western pond turtles if discovered at the Project site. With implementation of these measures the potential impact to Western pond turtles is expected to be less than significant.

Special-Status Bird Species, Bald and/or Golden Eagles and Native Bird Species

Special-status bird species could nest in areas bordering the Project site that would be subjected to construction-related noise. The Project does not include the removal of any trees. If special-status bird species nest near the Project site, there is a potential for construction noise to adversely affect nesting (Pacific Biology 2014). The Project would implement measures as required in the USFWS Programmatic BO. Avoidance measures have been included in the Project Description to minimize noise disturbance (measure MB-1, see Table 2-2) to special status birds. With implementation of this measure potential impact to special status birds is expected to be less than significant.

The proposed Project would have no effect on bald or golden eagles, as these species are not known to occur the Project area and suitable habitat (large open water areas, tall trees) do not occur within or adjacent to the Project footprint. The proposed Project would not require a permit from USFWS under the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act (Lux Environmental Consulting 2014).

The active nests of most native bird species are protected by the Migratory Bird Treaty Act (16 U.S.C. 704) and the California Fish and Game Code (Section 3503). Cliff swallows and black phoebe have nested in the culverts, and the culverts are likely to be used by these species during the nesting season. There is the potential for the construction to disturb nesting by cliff swallow and other common bird species. As described in the Project Description, the avoidance measure to prevent the commencement of nesting by cliff swallows and black phoebe would be implemented prior to the start of the nesting season to avoid impacts to these birds. With implementation of these measures the potential impact to cliff swallows and black phoebe is expected to be less than significant.

Central California Coast Steelhead ESU/Rainbow Trout

Pinole Creek has a healthy population of native fishes including *O. mykiss* (steelhead/rainbow trout), which have been documented on numerous occasions and in a number of locations in Pinole Creek (Pacific Biology 2014). The extent to which migratory steelhead contribute to this population or whether it is composed of resident rainbow trout is currently unknown. However, in recent years steelhead have been observed on several occasions in the lower reaches of Pinole Creek and in the upper watershed on EBMUD land (Pacific Biology 2014). During the course of construction there is the potential for *O. mykiss* to be impacted if present.

In the long-term, the proposed Project would improve habitat conditions in Pinole Creek for steelhead and potentially for other special-status wildlife species by improving the fish passage

at the I-80 culvert thereby removing the most significant barrier to steelhead migration in the Pinole Creek watershed. EBMUD has documented adult steelhead that were unable to pass beyond the I-80 culverts (EBMUD 2009). The proposed Project would improve the passage at this barrier and would open up at least 6.8 miles of steelhead habitat on the main stem of Pinole Creek, with nearly 4.3 miles of this habitat located in a protected watershed managed by EBMUD and the Briones Agricultural Preserve. National Marine Fisheries Service (NMFS) has also commented on the Fish Passage Improvement design and has stated that the proposed culvert retrofit would “significantly improve passage conditions for adult and juvenile steelhead” (Appendix D). In the long term the Project would have a beneficial effect on steelhead.

The Project Description includes the implementation of applicable protection and minimization measures including the measures listed in the NMFS Programmatic Biological Opinion (BO) for Permitting of Fisheries Restoration Projects within the Geographic Boundaries of NMFS' Santa Rosa, California, Field Office (NMFS 2006). Potentially applicable NMFS BO protection and minimization measures for steelhead are included in Appendix A. With implementation of these measures the potential impact to *O. mykiss* is expected to be less than significant.

Special Status Plant Species

As shown in Figure 2, the Project's grading footprint is restricted to heavily disturbed creek banks and the creek channel. The creek banks support a dense growth of weedy vegetation characteristic of disturbed habitats. Due to the extent and density of weedy vegetation and the absence of habitat conditions associated with local rare plant occurrences, special-status plant species would not be expected to occur within the Project site (Pacific Biology 2014). The special-status species, Santa Cruz tarplant, Diablo helianthella, and soft bird's-beak have been documented in surrounding areas but not at the Project site (Pacific Biology 2014).

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 U.S. Fish and Wildlife Service?

Less than Significant Impact. The Project site is located within Pinole Creek and construction would occur in the creek along the riparian stream bed and banks. The site would be dewatered and water would be diverted downstream during the 9-week construction period. During construction the Project could significantly affect Pinole Creek. Avoidance and minimization measures have been included in the Project Description and would be incorporated into the Project construction to minimize the short-term construction related impacts and the impacts would be less than significant.

In the long-term, the proposed Project would be a benefit to wildlife by improving habitat conditions in Pinole Creek for steelhead and potentially for other special-status and other wildlife species.

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?

Less than Significant. Proposed restoration activities would temporarily impact approximately 0.03 acres of low quality wetlands and approximately 0.06 acres of Other Waters. Temporary impacts would be associated with grading, earthwork, and removal of concrete to allow construction of the fishway notch. An additional approximately 0.03 acres of low quality wetlands and approximately 0.02 acres of Other Waters would be permanently impacted by the proposed Project. Permanent impacts would be associated with placement of rock slope protection and engineered streambed materials (ESM) in the roughened rock chute and construction of the sill and training wall downstream of the west culvert.

The Project has been designed to avoid and minimize the effects to wetlands and Other Waters habitat while improving habitat for the special status steelhead species and other wildlife species. The permanent loss of the small quantity of wetland (0.03 acres) and Other Waters habitat would be mitigated by the improvements to the steelhead and wildlife species habitat. It is expected that wetland and Other Waters areas that would be temporarily disturbed would naturally re-vegetate given their location along the lower creek bank and in sediment deposits in the channel (Pacific Biology 2014). Measures have also been incorporated into the Project to minimize the disturbance to wetland and other sensitive habitat and with implementation of these measures the impact is expected to be less than significant.

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?

Less than Significant Impact. The proposed Project would result in short-term disturbance of the creek habitats and wildlife corridor during construction. This disturbance in the streambed and on the banks would include grading, earthwork, and removal of existing rip-rap. In addition, concrete would be removed from the culvert to accommodate the fishway notch. Heavy equipment moving in and out of the creek; concrete placement; and dewatering activities could also disturb existing habitat. These impacts are expected to occur over the approximately 9- to 10-week construction period. The avoidance and minimization measures described in the Project Description would be implemented to minimize impacts to wildlife during construction activities. After the construction is complete over the long term it is expected that the Project would benefit native resident and migratory fish and wildlife species.

During the construction period, there is the potential for interference with the movement of native resident fish and wildlife species due to the construction and construction related noise. Construction-related activities and noise could disrupt nesting by cliff swallows and black phoebe, or other bird species (including special-status species) potentially nesting in nearby areas. The avoidance and minimization measures described in the Project Description would be expected to minimize impacts to steelhead/rainbow trout and other wildlife species during

construction and dewatering activities. The implementation of the pre-construction nesting bird survey and the cliff swallow/black phoebe exclusion measures described in the Project Description would ensure that active nests of bird species protected by the Migratory Bird Treaty Act and California Fish and Game Code are not present during construction-related activities. With the avoidance and minimization measures incorporated into the Project Description potential Project-related impacts are expected to be less than significant.

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

Less than Significant Impact. The proposed Project does not require the removal of any trees. The City of Pinole has policies in the General Plan to protect biological resources as described above. Over the short-term during the construction period this Project would impact wildlife resources; however, the Project once constructed would improve these biological resources and have a beneficial effect by improving the habitat of special status and other resident wildlife species. With the implementation of measures described in the Project Description, the Project would have a less than significant effect.

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?

No Impact. No Habitat Conservation Plan, Natural Community Conservation Plan, or other local, regional, or State habitat conservation plan has been adopted for the Project site or the surrounding area.

3.6.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.7 CULTURAL AND PALEONTOLOGICAL RESOURCES

CULTURAL AND PALEONTOLOGICAL - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3.7.1 Environmental Setting

Ethnographic Setting

At the time of the Euroamerican contact (ca.1769), Native Americans identified as Costanoans occupied the area from San Francisco Bay to Southern Monterey Bay and the lower Salinas River. The term Costanoans designates a family of eight separate languages and tribelets, one of which, the Karkin tribelet, occupied the Carquinez Straight area. Costanoans typically moved between several semi-private camps and villages to take advantage of the seasonally available resources. A wide variety of ecological zones, such as valleys, sloughs, and coastal areas, were used to obtain subsistence resources. The City of Pinole is within the boundaries of the Karkin territory but it is also near areas other Native American groups may have occupied. The arrival of the Spanish in 1775 initiated a rapid decline of the Native American populations (City of Pinole 2010a).

Historic-period Overview

The history of the City dates to 1700 when Don Pedro Fages led an exploration through the Contra Costa County area. In 1823 Don Ignacio Martinez received a land grant from the Mexican government to the area that is now the City of Pinole. The land grant comprised over 17,000 acres. In 1824 Don Martinez built his first adobe hacienda on what is now Pinole Valley Park about 3 miles inland from San Pablo Bay. In the 1850s the Fernandez Mansion was built at the end of Tennent Avenue and it still stands today. In addition, the operation of the California Powder works in Hercules and the influence of other commercial activities, including the Gold Rush, agricultural shipping, and railroad shipping, shaped the architectural and historical character of the city primarily in the old town area (City of Pinole 2010a). These areas are not located near the Project site.

3.7.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

Both Contra Costa County and City of Pinole General Plan policy is to protect and preserve important archeological, historic, paleontological, and prehistoric resources. On the County's Archeological Sensitivity map the Project site was excluded from the survey due to the urban nature of the area. The City's General Plan includes the following policy:

Policy LU.3.4. Identify and protect sites and structures of architectural, historic, archeological, and cultural significance, including biological resources.

3.7.3 Impact Analysis

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

Less than Significant Impact. A records search conducted by the California Historical Resource Information System (CHRIS) was conducted and no recorded buildings or structures were found in the proposed Project area (CHRIS 2013). Review by the CHRIS indicates that there is a low potential for the discovery of unrecorded historic-period archeological resources and therefore the potential impact is less than significant.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less than Significant with Mitigation. A records search conducted by the California Historical Resource Information System was conducted and no recorded archeological resources were found in the proposed Project area (CHRIS 2013). However given the location of the Project site within a mile of San Pablo Bay and near a Holocene landform there is a high potential for unrecorded Native American archeological resources.

MM CUL-1: Inadvertent Encounter of Undiscovered Archeological and/or Human Remains. All site workers shall be trained to recognize potential buried artifacts and shall be informed about the appropriate procedures should buried artifacts or human remains be encountered. If buried cultural resources, such as chipped or ground stone, large quantities of shell, historic debris, or building foundations are discovered inadvertently during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with CCRCO, other agencies, and Native American representatives as appropriate.

If human skeletal remains are encountered, the County coroner shall be contacted immediately. If the County coroner determines that the remains are Native American, the

coroner is then required to contact the Native American Heritage Commission (pursuant to Section 7050.5 (c) of the California Health and Safety Code) and the County Coordinator of Indian Affairs. A qualified cultural resources specialist shall also be contacted immediately.

If any human remains are discovered in any location, there shall be no further work or disturbance of the location or any nearby area reasonably suspected to overlie adjacent human remains until:

- the County coroner has been informed and has determined that no investigation of the cause of death is required; and
- if the remains are of Native American origin,
 - the descendants of the deceased Native American(s) have made a recommendation to the landowner or the person responsible for the excavation work for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98; or
 - The Native American Heritage Commission was unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission.

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

Less than Significant with Mitigation. Paleontological resources are fossils which are the remains or traces of prehistoric plants and invertebrate and vertebrate animals as well as fossil localities and formation. Fossils are important scientific and educational resources because they can help document the presence and evolutionary history of particular groups of organisms, reconstruct the environment in which these organisms lived, and provide a history of environmental change. Geologists also use fossils to determine the relative ages of the sediments in which they occur and the geologic events that resulted in the deposition of the sediments.

A search of the University of California Museum of Paleontology collections Database did not identify any evidence of significant paleontological resources with the City of Pinole (City of Pinole 2010a). Nonetheless, the potential presence of paleontological resources cannot be ruled out. With implementation of mitigation measure MM CUL-2, this potential impact would be less than significant.

MM CUL-2: Inadvertent Encounter of Undiscovered Paleontological Resources. In the event that buried paleontological resources are encountered during Project grading, site preparation, or construction, work shall be suspended within 50 feet of the discovery and the City of Pinole Planning Department shall be immediately notified. The City will coordinate any necessary investigation with a qualified paleontologist who can assess the significance of the find and provide appropriate management recommendations.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Less than Significant with Mitigation. Research into ethnographic literature for the Project area and areas adjacent to the Project area found no references to Native American resources. Given the location of the Project site has a high potential for unrecorded Native American archeological resources, there is a potential for inadvertently uncovering human remains. With implementation of mitigation measure MM CUL-1, described above, this impact would be less than significant.

3.7.4 Mitigation Summary

Implementation of the following mitigation measures would reduce the Project-related impacts to less than significant.

- **MM CUL-1: Inadvertent Encounter of Undiscovered Archeological and/or Human Remains.**
- **MM CUL-2: Inadvertent Encounter of Undiscovered Paleontological Resources.**

3.8 GEOLOGY AND SOILS

GEOLOGY AND SOILS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.8.1 Environmental Setting

Regional Setting

The proposed Project site lies within the Coast Ranges geomorphic region. The area is characterized by nearly parallel northwest-trending ridges interspersed with alluvium-filled valleys. Terraces and alluvial fans border the ridges of the Coast Ranges before they intersect the San Francisco, San Pablo, and Suisun bays and merge into tidal flats along the bay margins. Surface elevations within the Coast Ranges generally range from several feet below mean sea level to more than 3,849 feet above sea level at its highest peak at Mount Diablo, located in central Contra Costa County (City of Pinole 2010a).

The Coast Ranges can be further divided into the northern and southern ranges, which are separated by San Francisco Bay. San Francisco Bay lies within a broad depression created from an east-west expansion between the San Andreas and the Hayward Fault systems (Halley 1997). Much of the Coast Ranges are composed of marine sedimentary deposits and volcanic rocks that form northwest trending mountain ridges and valleys, running subparallel to the San Andreas Fault Zone. In the San Francisco Bay Area, movement along this plate boundary is distributed across a complex system of strike-slip, right-lateral, parallel and sub-parallel faults. These faults include the San Andreas, Hayward, Rodgers Creek-Healdsburg, Concord-Green Valley, Greenville-Marsh Creek, Calaveras, and West Napa Faults (GSC 2003).

Project Setting

The proposed Project site is located in northern Contra Costa County (County) along and within San Pablo Bay (Bay). The geologic units underlying the Pinole Creek watershed are complexly faulted and folded, in association with movement along the Hayward, Pinole, Franklin Canyon, and other unnamed and active strike-slip fault systems. The Pinole and Franklin Canyon Faults control the specific rock formations that are present in the watershed. The rocks present in the watershed are primarily Miocene to Eocene (5.3 to 55 million years old) sandstones, shales and volcanic tuffs. The geologic formations partially control the topography, the soils that develop, the vegetation that is present, and in turn, the natural geologic erosion potential of the watershed (SFEI 2005).

The Project vicinity contains a variety of different soil types, resulting from the assemblage of parent rock types and other soil forming factors. Along the valley bottom, soils consist of younger alluvial fan deposits and typically in the Clear Lake-Cropley association, consisting of gently sloping, poorly drained and moderately well drained clays on valley fill and in coastal valley basins (SFEI 2005). On the hill slopes, the soils are typically in the Los Osos-Millsholm-Los Gatos association, consisting of moderately steep to very steep, well-drained clay loams and loams that formed in material weathered from interbedded sedimentary rock on uplands (SFEI 2005). The soils map in the City's General Plan identifies Clear-Lake Clay and Millsholm Loam, 30 – 50 percent slopes, as the specific soil types located at the Project site (City of Pinole 2010a).

Soil borings installed in the Project area by the Corps of Engineers in September 1959 indicate that the bedrock is well consolidated and consists of moderately soft sandstone and tuff. Alluvium in the valley is more than 28 feet deep. The alluvium consists primarily of firm clay with minor amounts of silt, sand, and gravel. One boring was located immediately adjacent to the freeway. The boring was constructed to a depth of approximately 17 feet MSL (approximately 9 to 10 feet below the bottom of the proposed channel). The soil in this boring consisted of medium stiff to stiff clay. Groundwater was encountered at approximately 29 feet MSL, several feet above the proposed bottom of the channel (USACE 1962).

Faults and Seismicity

The San Francisco Bay region is situated on a plate boundary marked by the San Andreas Fault System, which consists of several northwest trending active and potentially active faults, as

shown on Figure 8. The U.S. Geological Survey Working Group on California Earthquake Probabilities (USGS 2003) evaluated the probability of one or more earthquakes of Richter magnitude 6.7 or higher occurring in the San Francisco Bay Area within the next 30 years. The result of the evaluation indicated a 62 percent likelihood that such an earthquake event would occur in the Bay Area between 2002 and 2032 (USGS, 2002). In April 2008, scientists and engineers released a new earthquake forecast for the State of California called the Uniform California Earthquake Rupture Forecast which updated the earthquake forecast made by the 2002 Working Group. Results of the forecast indicated a 63 percent likelihood that a strong earthquake would strike the greater San Francisco Bay Area (USGS 2003).

The Project site is located approximately 3 miles and 18 miles east of the Hayward and San Andreas faults, respectively. The Project site is also located near other active faults, such as the Concord-Green Valley fault located 12 miles to the west, the West Napa fault located approximately 12 miles north, the Roger Creek fault located 15 miles northwest, and the Calaveras Fault located 22 miles southeast of the Project site. The Project site could be subjected to damage from movement on any one of the active faults. The Hayward and San Andreas fault zones are considered the faults of greatest concern to Contra Costa County and throughout the Bay Area due to their location and size (City of Pinole 2010a).

The Pinole Fault, which runs near the Project site (see Figure 8), is the southeastern most onshore continuation of the Rodgers Creek Fault. The Pinole Fault branches northerly through the lower Pinole Creek Watershed forming a “Y.” The trunk and eastern leg of the “Y” essentially follow the Pinole Creek drainage, and the western leg extends from Pinole Creek northwesterly, to the Bay margin. The Pinole Fault was believed to be inactive (no activity within the last 10,000 years); however, recent research has shown that the Pinole Fault has undergone activity within the last 10,000 years and should be considered as an active fault (City of Pinole 2010a). Age dating of sediment in San Pablo Bay shows that the Pinole Fault has a recurrence interval of approximately every 900 years, with repeated movement over the last 10,000 years. Additionally, the Pinole Fault may potentially be a linking structure between the Rodgers Creek Fault and the Hayward Fault, thereby significantly increasing the potential rupture length and the maximum earthquake which may be generated by these faults (City of Pinole 2010a).

Landslides

A landslide is a mass of rock, soil, and debris displaced down-slope by sliding, flowing, or falling. The susceptibility of land to slope failure is dependent on the slope and geology as well as the amount of rainfall, excavation or seismic activities. Steep slopes and down-slope creep of surface materials characterize areas most susceptible to landslides. Landslides can cause severe damage to structures. In April 2006, the City experienced a large landslide induced by heavy rainfall on I-80 between Pinole Valley Road and Appian Way closing the westbound No. 4 lane for several months (City of Pinole 2010c).

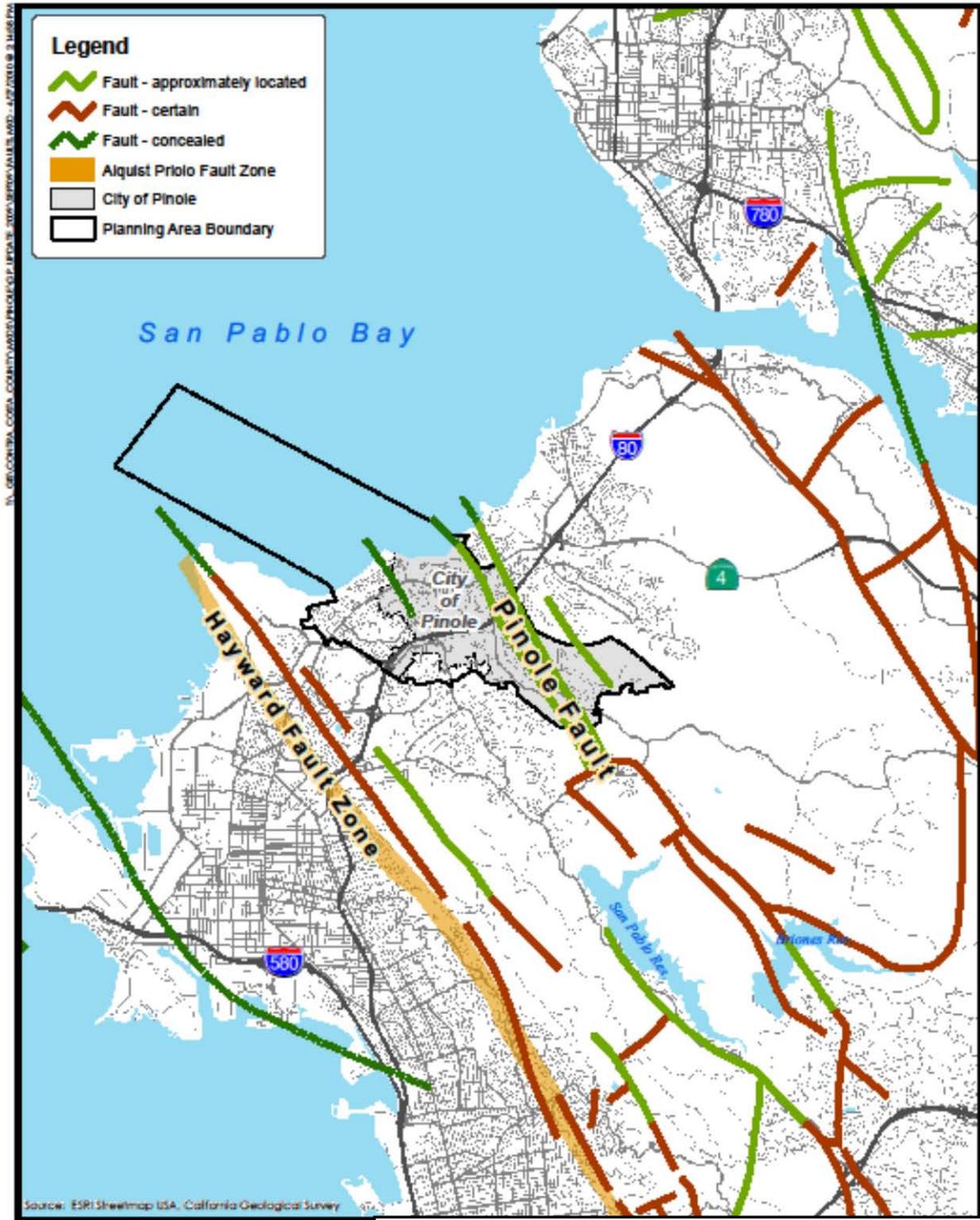


FIGURE 8
LOCATIONS OF FAULTS NEAR THE PROJECT SITE

Source: City of Pinole 2010a

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Soil Erosion

Soil erosion is the loss of soil due to running water or wind; the greatest risk typically occurs in areas with steep slopes and exposed soils. Rates of erosion can vary depending on the soil material and structure, placement and human activity. Erosion is most likely on sloped areas with exposed soil; especially where unnatural slopes are created by cut and fill activities. Soil erosion rates can therefore be higher during the construction phase. The banks of the flood control channel are steep, and potentially subject to erosion. The slopes are currently vegetated and are partially covered by riprap.

Expansive Soils

Expansive soils contain clays and therefore possess a "shrink-swell" characteristic. Shrink-swell is the cyclic expansion and contraction that occurs in fine-grained clays from the process of wetting and drying. Damage to structures may occur over if structures placed directly on expansive soils are not designed properly. The Project site is not located on expansive soils.

Lateral Spreading

Lateral spreading refers to landslides that typically occur on gentle slopes and have rapid fluid-like flow movement. There are no gently sloping areas within the Project site.

Differential Settlement

Differential settlement occurs when soil settles unevenly, particularly after liquefaction. Differential settlement occurs because the soil layers that liquefy are not of a uniform thickness, or because there are considerable differences in soil composition. Differential settlement can also occur when geological materials are improperly compacted during construction. Differential settlement is of concern because it can damage structures.

Tsunamis and Seiches

A tsunami is a long high sea wave caused by an earthquake, submarine landslide, or other disturbance. Due to the narrowness of the Golden Gate, tsunamis pose relatively little risk inside the Bay (City of Pinole 2010a). A seiche is a standing wave oscillation in an enclosed water body that continues after the cessation of the originating force. Seiches may be triggered by atmospheric conditions or seismic events. Seiches and tsunamis can inundate nearshore areas. The Project area is located approximately 8,000 feet upstream of San Pablo Bay, and at an elevation of 28.8 feet NAVD or higher (Michael Love & Associates 2013b). It is not within a designated tsunami evacuation zone (ABAG 2014), and it is highly unlikely to be inundated by either seiches or tsumamis.

Seismic Hazards

Seismic hazards include surface fault rupture, ground shaking, ground failure including liquefaction and landslides, as described below.

Surface Fault Rupture

Seismically induced ground rupture is defined as the movement of the ground along one side of a fault relative to the other side in response to an earthquake's seismic waves. The magnitude and nature of fault rupture can vary for different faults or even along different strands of the same fault. Ground rupture is considered more likely along active faults.

Ground shaking

Ground movement intensity during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. Areas that are underlain by bedrock tend to experience less ground shaking than those underlain by unconsolidated sediments such as artificial fill. The Project area is not located in an Alquist-Priolo Earthquake hazard zone, but could still experience strong ground shaking from near-by faults (City of Pinole 2010a).

Liquefaction

Liquefaction is the sudden temporary loss of shear strength in saturated, loose to medium-density granular sediments subjected to ground shaking. When liquefaction occurs, it can cause foundation failure of buildings and other facilities. The potential for liquefaction depends on a number of factors including the duration and intensity of earthquake shaking, particle size distribution of the soil, density of the soil, and elevation of the groundwater. According to the Association of Bay Area Governments (ABAG) Liquefaction Susceptibility Map, the Project site has a moderate risk of liquefaction between I-80 and San Pablo Avenue and a high risk along Pinole Creek (ABAG 2014).

Seismically-Induced Landslides

The susceptibility of sloped lands to failure during an earthquake is dependent on the level of ground shaking, underlying geology, thickness of alluvial material, and degree of saturation.

3.8.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The City has policies in its General Plan to protect the long-term productivity and economic value of its soil resources. Consistent with the California Building code, the City also has restriction for building on certain soils and geological areas due to the geologic and erosion hazards. Policy HS. 3.3 in the General Plan requires that all geologic hazards be adequately addressed and mitigated through project development. Development proposed in areas of potential geological hazards should not be endangered by, nor contribute to, the hazardous conditions on the site or on adjoining properties. Policy HS.3.7 limits development and requires appropriate control measures in conjunction with proposed development in areas susceptible to erosion. Action HS.3.7.2 would establish riparian and stream restoration programs that may include stormwater treatment, erosion control measures, stream cleanup projects and

revegetation plans for denuded areas. Policy LU.5.3 retains the Open Space designation to protect the resource and recreation values of Pinole Creek.

The City of Pinole's Sediment and Erosion Control Ordinance requires that all construction activities for project sites over 0.25 acres must submit sediment and erosion control plans to the City. Plans must effectively minimize soil erosion and sedimentation from the project site.

3.8.3 Impact Analysis

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.

Less than Significant Impact. The Project site is not zoned as an Earthquake Fault Zone under the Alquist-Priolo Act. The potentially active Pinole Fault has a recurrence interval of approximately every 900 years, with repeated movement over the last 10,000 years. Although this fault is susceptible to fault rupture, especially as secondary movement triggered by a nearby active fault, it is considered less of a seismic hazard than other active Bay Area faults because of its lower probability of activity and low potential generate surface fault rupture (City of Pinole 2010a). The construction of the fishway passage would not affect the seismic stability of the I-80 culvert, and the finished slopes in the creek bed and on the east slope of the creek would meet applicable factors of safety. The training wall and other structures that are being constructed for the Project would be required to meet all applicable building codes. The impact from a potential rupture of a known earthquake fault would be less than significant.

ii) Strong seismic ground shaking?

Less than Significant Impact. The Project site is located in an area that has the potential to be subject to violent ground shaking from an earthquake along any of the active faults located in the region, including the Hayward Fault, the closest major fault to the Project site. However, the proposed Project does not include construction of any habitable structures that could potentially be damaged or cause injury or death. Workers may be subject to ground shaking in the event that a significant earthquake occurred during the Project, but the likelihood of this occurring during the relatively short (9 to 10 weeks) work period is relatively remote.

Work in the culvert, if done improperly, could potentially affect the seismic stability of the culvert/bridge structure. Improper sizing and placement of RSP could lead to significant loss of RSP in an earthquake. Design plans were developed under the supervision of a licensed engineer, and are compliant with applicable seismic codes (Michael Love Pers. Comm. 2014e). In addition, as part of issuing an encroachment permit for the work in its Right-of-Way, Caltrans has reviewed and approved the design plans. Furthermore, the Flood Control District

has reviewed and approved the plans for RSP placement. Therefore, the impact to people or structures from ground shaking would be expected to be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less than Significant Impact. Mapping compiled by ABAG shows that the Project site is located in an area mapped as having a moderate potential for liquefaction (ABAG 2014). The proposed Project would not significantly alter the existing site conditions such that landslides would be more likely to occur. Only minor structures would be built (e.g., sill, training walls), and no structures would be designed for routine use by people. In addition, as part of issuing an encroachment permit for the work in its Right-of -Way, Caltrans has reviewed and approved the design plans. Furthermore, the Flood Control District has reviewed and approved the plans for RSP placement. Therefore, the impact to people or structures from seismic-related ground failure would be expected to be less than significant.

iv) Landslides?

No Impact. There would be no work that would affect the stability of the creek banks on the upstream side of the culvert. No work that could affect the stability of the bank would be performed on the west bank of the creek downstream of the culvert. Any grading performed on the east creek bank downstream of the culvert would result in a gentler slope, thus reducing the potential for slope failure. Furthermore, the downstream banks would be stabilized with RSP. All potential staging areas are relatively level and would not be subject to any landslides. No impact would be expected.

b) Result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Limited grading may be conducted to allow construction access into the creek. All work would be conducted during the dry season, which minimizes the potential for erosion. No top soil would be removed. During construction, all unpaved soil surfaces would be maintained in accordance with applicable water pollution control plan and best management practices to minimize the potential for erosion. Under the City of Pinole's Sediment and Erosion Control Ordinance, all construction activities for project sites over 0.25 acres must submit sediment and erosion control plans to the City. Plans must effectively minimize soil erosion and sedimentation from the project site. The BMPs included in the Project Description would minimize potential soil erosion to a less than significant level.

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?

No Impact. The Project site is not located on unstable soils (Michael Love Pers. Comm. 2014d). There would be no activities associated with the proposed Project that would result in the creation of unstable soils, and there would be no impacts on- or off-site.

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?

No Impact. The proposed Project would not include any aboveground improvements that would be susceptible to the effects of expansive soils; therefore, there would be no impact from the Project.

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?

No Impact. No septic tanks or alternative wastewater systems are proposed for the Project and therefore there would be no impact from the Project.

3.8.4 Mitigation Summary

The Project would not result in any potentially significant impacts; no mitigation is required.

3.9 HAZARDS AND HAZARDOUS MATERIALS

HAZARDS AND HAZARDOUS MATERIALS – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.9.1 Environmental Setting

The Project site is located in and adjacent to the Pinole Creek. A staging area would be located in one of three possible sites which include (1) the Flood Control District’s access road immediately to the east of the site (preferred), (2) at the City of Pinole Henry Avenue Parking Area (Alternate Staging Area 1), or (3) at the AMF Pinole Valley Lanes bowling alley parking lot adjacent to the Flood Control District’s Access Road to the east of the Project site (Alternate

Staging Area 2). A search of the DTSC Envirostor Database⁵ (DTSC 2014) indicated that the only potentially contaminated site within 3,000 feet of the Project site is a soil and groundwater site cleanup of solvents from the former Mercury Dry Cleaners that had been located at the shopping center at 2714 Pinole Valley Road, immediately upstream of the Project site. This site has been approved for no additional groundwater monitoring. DTSC has indicated that soil contamination is not expected at the Project site and groundwater contaminated with VOCs has the potential to occur at low levels (Michael Love Pers. Comm. 2014c)

3.9.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

Contra Costa County (County) has a Hazardous Waste Management Plan that is incorporated into the County's General Plan. The goals and policies relevant to waste disposal are to eliminate the generation and the disposal of hazardous waste to the maximum extent feasible (Contra Costa County 2005). The City of Pinole includes the following policies in the Health and Safety Chapter its General Plan:

- Action HS.3.4.3. Ensure that sites in Pinole that are contaminated with hazardous substances are cleaned through decontamination of the soils, treatment, and filtration of the groundwater.
- Policy HS.3.5. Require proper handling, storage, disposal, and cleanup of hazardous materials to prevent leakage, potential explosions, fires or the escape of harmful gases and to prevent individual innocuous materials from combining to form hazardous substances especially at the time of disposal.
- Policy H.6. Support measures to responsibly manage hazardous waste to protect public health, safety and the environment, and support state and federal safety legislation to strengthen requirements for hazardous materials transport.

3.9.3 Impact Analysis

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

Less than Significant Impact. The proposed Project would require the use of following hazardous materials (containing possible hazardous components) to implement the Project:

- Fuel (diesel and gasoline);
- Penetrating oils, lubricating oils and hydraulic oils for equipment;

⁵ The Envirostor Database currently includes only information on inspection activities and enforcement actions at contaminated sites on or after 2009 unless there is verification of the accuracy of the data prior to 2009.

- Batteries; and
- Marking paint.

Only small quantities of these materials would be needed, primarily fuels, and all materials would be managed in accordance with all applicable requirements. Furthermore, the contractor would be required to develop a spill prevention plan and to train all of its employees in spill prevention and response. No maintenance of construction equipment would be permitted at the Project site, and the contractor would be encouraged to fuel construction equipment off-site, if feasible.

Following construction of the Project, the only activities likely to be required are regular inspections and potentially debris removal. Very small quantities of fuel may be required if motorized equipment is needed to remove large debris. These materials are commonly used, and when appropriately managed present only a minimal hazard.

The site is near potential historical groundwater contamination from the former Mercury Dry Cleaner facility (Michael Love Pers. Comm.2014c). The former mercury cleanup site has been approved (June 2014) to discontinue groundwater monitoring. It is unlikely that this site would affect the project site; however, historical contamination may be present (Michael Love Pers. Comm. 2014c). When soils are excavated they will be stockpiled and tested for contaminants consistent with the DTSC Advisory (DTSC 2014) prior to reuse, or according to the landfill's requirement prior to disposal at an appropriate landfill. Groundwater would also be stored in containers and tested prior to reuse at the project site or disposal as described in the Project Description. A health and safety plan would be prepared and all workers potentially in contact with contaminated soil or groundwater would have the necessary training. It is not expected that there would be a significant impact from project-related work and therefore the impacts to less than significant.

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?

Less than Significant Impact. As described in the Project Description, the contractor would be required to manage all hazardous materials in accordance with applicable regulations, to develop a spill response plan, health and safety plan, soil and groundwater testing and management plan, and to train its employees in spill prevention and response. The contractor would also be required to maintain appropriate spill response equipment and materials at the project site, and to provide adequate containment for all operations involving storage or transfer of hazardous materials. Only small quantities of hazardous materials would be used or stored at the project site. Given the contract soil testing and management requirements that would be imposed, as well as the small quantities of materials that would be in use, it is not expected that there would be a risk to either the public or the environment from releases of the hazardous materials used for the Project the project-related impacts are expected to be less than significant.

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

Less than Significant Impact. An elementary school is located approximately 1,400 feet (0.26 miles) north of the northern end of the project site, and a high school is located within approximately 1,500 feet (0.28 miles) south of the southern end of the Project site (Google Earth, 2014). No acutely hazardous materials would be used for the Project. As described above, small quantities of hazardous materials, primarily fuels, would be used during construction of the Project and possibly infrequently as part of the long term maintenance of the fish passage. These materials are in common use, and would be managed in accordance with all applicable rules and regulations. Therefore, although the project site is near two schools, with the measures incorporated into the Project Description the potential for Project-related impacts are expected to be less than significant.

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?

No Impact. The site is not included on the list of hazardous materials sites pursuant to Government Code section 65962.5.

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?

No Impact. Buchanan Airport in Concord, the closest airport, is located more than 12 miles from the project site. There are no public airports within two miles of the Project and therefore, no impact would be expected.

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

No Impact. No private airstrips were found within the vicinity of the Project site. Therefore, no impact would be expected.

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

No Impact. The majority of the construction work would occur in the creek and culvert. The construction staging area would be situated so as to ensure continued access for emergency vehicles. None of the construction activities would physically interfere with an adopted emergency response plan or emergency evacuation plan. Following construction, there would be occasional inspections and possible debris removal. These activities are not expected to pose

a risk of interfering with an adopted emergency response plan or emergency evacuation plan. Consequently, no impact would be expected.

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?

Less than Significant Impact. While there is some undeveloped open space to the west of the downstream portion of the project site, the proposed work would not be expected to create a significant fire risk to surrounding areas. Construction work would occur primarily in the creek bed, on the channel banks, the Flood Control District Access Road, the Temporary Water Reuse Area used for water disposal, and in the culvert. Staging would occur on a paved surface. All earth moving equipment and portable equipment would have spark arrestors and during the high fire period fire suppression equipment would be available onsite. With the measures incorporated into the Project Description the potential for project-related impacts are expected to be less than significant.

3.9.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.10 HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.10.1 Environmental Setting

Regional Hydrologic Setting

The Project area lies within the San Francisco Bay Area Hydrologic Basin. San Francisco Bay is an estuary receiving its major source of freshwater from the Sacramento-San Joaquin drainage basin which discharges into San Pablo Bay. Minor contributions of freshwater come from local streams and creeks. Freshwater strongly influences environmental conditions in the San Francisco Bay Estuary. The Bay is also influenced by incoming salt water from the ocean. Because of its highly dynamic and complex environmental conditions, San Francisco Bay supports an extraordinarily diverse and productive ecosystem.

The Pinole Creek Watershed includes the Pinole Creek, Pavson Creek, Oak Moth Creek, Costs Creek, Lagoons Creek, Pereira Creek, April Creek, and Cottonwood Creek. Pinole Creek is the primary surface water body in the City. The Pinole Creek headwaters begin at Briones Hills and follow in a northwesterly direction. The entire Pinole Creek corridor is designated as being within the 100-year floodplain (PMC 2010).

Climate

Western Contra Costa County has a moderate climate with an average annual precipitation of approximately 23 inches per year. The climate is generally characterized by relatively cool summers and mild winters. In summer, a steady marine wind blows through the Golden Gate and up the Carquinez Strait. This moderating influence is reflected in a mean July temperatures of 63 degrees Fahrenheit (°F) and the mean January temperatures of 50°F (City of Pinole 2014).

Project Setting

The total watershed for Pinole Creek is approximately 15.3 square miles with 33 miles of blue line streams. Pinole Creek is a perennial stream and a tributary to San Pablo Bay. The lower third of the watershed is urban, the middle third is protected EBMUD watershed lands, and most of the upper third is in the Briones Agricultural Preserve. Pinole Creek has no major water diversions. Elevations within the watershed range from sea level up to 1,000 feet in elevation. Pinole Creek is unusual for the Bay area because the middle and upper watershed is protected and sparsely populated (EBMUD 2009).

The channel upstream of the I-80 culvert is highly entrenched, with deep pools and riparian vegetation growing within the main channel. At the top of the channel bank is a residential neighborhood on the western side and a shopping center and parking lot on the eastern side. Pinole Creek both upstream and downstream of the I-80 culvert is in a FEMA mapped floodplain (Michael Love and Associates 2013a). Under current conditions, models indicate that during a 100-year flood event water in the creek upstream of the I-80 culvert would exceed the top of the creek bank into a grassy swale west of the culvert and the parking lot east of the culvert. The stream channel downstream of the I-80 culvert maintains sufficient capacity for a 100-year discharge (Michael Love and Associates 2013a).

Water Quality

The Pinole Creek watershed is part of the San Pablo Basin (SFRWQCB 2012). In the San Francisco Bay Basin Plan, the Regional Water Quality Control Board (RWQCB) identifies a number of beneficial uses of the Bay that must be protected (RWQCB 2011). The beneficial uses include cold freshwater habitat, warm freshwater habitat, fish migration, contact and non-contact recreation, wildlife habitat, preservation of rare and endangered species, fish spawning, and fish migration (RWQCB 2013). Pinole Creek is included in the Clean Water Act Section 303(d) list of water quality limited segments of water bodies that contain pollutants. The Creek is listed as containing diazinon, a pesticide use to control crops, and found in stormwater runoff (PMC 2010). As described in Section 3.7, low levels of historical groundwater contamination may occur from the former Mercury Dry Cleaner facility, east of the inlet culvert (Michael Love Pers. Comm.2014c).

3.10.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The County's overall policy is for projects to comply with the requirements of the RWQCB. It also has water resource goals (Contra Costa County 2005). These goals include the following:

- Goal 8-U. To maintain the ecology and hydrology of creeks and streams and provide an amenity to the public, while at the same time preventing flooding, erosions and danger to life and property.
- Goal 8-V. To preserve and restore remaining natural waterways in the county which have been identified as important and irreplaceable natural resources.

The City's General Plan (City of Pinole 2010c) has water quality and hydrology policies pertinent to the Project. They include the following:

- Goal HS.2: Protect the community from the risk of flood damage and improve surface water quality.
- Goal HS.7: Ensure that all new development meets or exceeds state and federal water quality standards.

The City identifies Pinole Creek at the I-80 culvert as an area that could possibly be affected by flooding (City of Pinole 2010c).

3.10.3 Impact Analysis

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

Less than Significant Impact. During construction the construction area would be isolated and the creek would be diverted around the construction area. The construction would occur between June 15 and October 15 when rain is not expected to occur in the area. Any storm water that does accumulate upstream of the culverts would be routed to avoid the construction area. Water that collects within the construction would preferentially be reused for construction needs, dust control within the Project site, or irrigation at the Temporary Water Reuse Area. Water used at the Temporary Water Reuse Area would be discharged through a filter bag to filter out sediment. Any water from within the construction area that is discharged downstream of the Project site would meet all applicable RWQCB requirements. Any groundwater removed during construction would be containerized, tested as applicable, and discharged as appropriate. Thus construction activities in the culvert and the creek bed would not be expected to affect water quality.

As described in Section 3.7, the contractor would also be required to develop and implement a spill prevention plan, and to train its employees in spill prevention and response. Following construction, the periodic inspections and potential debris removal are not expected to impact water quality. The avoidance and minimization included in the Project Description would ensure that potential Project-related water quality impacts remain less than significant.

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)?*

Less than Significant Impact. The Project may require the temporary removal of groundwater during the construction period in accordance with the RWQCB permit. As discussed above, the groundwater generated from within the construction area would preferentially be used for construction purposes, dust control or irrigation at the project site and/or discharged to the creek after being containerized following appropriate testing. Any groundwater that has unacceptable levels of contamination would be disposed at an appropriate off-site facility. Testing and allowable discharge limits would be specified in the RWQCB permit.

Baker tanks may be used to filter and treat ground water encountered in the excavation areas, before it is released back into the channel downstream of the Project area. While small quantities of groundwater may have to be removed to construct the fishway notch and other project features, the geological report prepared by WRECO (Wreco 2012) indicates that recharge is slow, and that water levels would easily be managed using conventional groundwater controls, such as low capacity pumps. There are no known active wells in the

immediate vicinity of the Project site (SWRCB 2014). With the avoidance and minimization measures included in the Project Description potential Project-related impacts are expected to be less than significant.

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?

Less than Significant Impact. Construction would occur in the dry weather between June 15 to October 15, and in a dewatered construction site condition. A water diversion and dewatering plan would be prepared. The plan would include channel diversion upstream of the Project construction area, as well as rerouting of any potential drainage from the three stormwater pipes leading into the project area. A pump with 5 mm intake screening would be used to pump water from upstream of the construction reach to below the downstream cofferdam via piping. After Project completion all the diversion equipment would be removed and mulching and seeding would be conducted.

Over the long term (after construction), there would be no substantial changes to the existing drainage patterns in the area. The proposed Project would result in a slight increase in flow through the western culvert during low flow conditions; however, this is not expected to affect erosion of the banks or creek bed. Flow through the culverts would equalize once water levels in the creek exceed approximately 3 feet in depth (the training walls are kept low by design, so that they will overtop when water depth reaches 3 feet). The fishway passage is designed to minimize sedimentation in the culvert by allowing for water to flow at a sufficient velocity to keep coarse sand and sediment in suspension (Michael Love and Associates 2013a). RSP would be used to prevent erosion of the channel banks. The erosion prevention and control measures in the Project Description would ensure that potential Project-related water quality impacts remain less than significant.

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?

Less than Significant Impact. There would be a short-term substantial change to the existing drainage patterns at the site during construction. During construction the Project would dewater the site by diverting surface water flows around the construction area. This diversion would be temporary and occur during the dry season between June 15 and October 15. After construction is complete, all dewatering equipment and structures (e.g. cofferdams, sumps) would be removed and the course of the creek would return to pre-existing drainage patterns.

After construction the training wall would maintain sufficient water velocities to keep stream-supplied sediment in transport and passing through the culvert. The upstream end of the training wall would be tapered to help facilitate passage of debris. The proposed Project would result in a slight increase in flow through the western culvert; however, this is not expected to

affect flooding patterns at high flows. As noted above, flow through the culverts would equalize once water levels in the creek exceed approximately 3 feet in depth. The proposed Project has been designed to avoid any increases in flooding. Limited flooding during a 100-year flood event in the channel upstream of the I-80 culvert could occur into a grassy swale west of the culvert and the shopping center parking lot east of the culvert. The proposed Project would not have a significant effect on this existing condition. Downstream of the roughened chute the proposed Project is not expected to change water surface elevations (Michael Love & Associates 2013a). Consequently, Project-related impacts are expected to be less than significant.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. The proposed Project would not cause any changes in existing run-off or additional sources of runoff. The Project has been designed to avoid any change to the 100-year flood flow (Michael Love and Associates 2014a). During the construction activities, water normally flowing in the creek bed and the three existing stormwater outfalls within the work area would be rerouted but there would be no new sources of runoff. This would not affect the conveyance capacity of the stormwater system. No impact to runoff water is expected.

f) Otherwise substantially degrade water quality?

No Impact. The Project has been designed to minimize any impacts to water quality, and any discharges of water from the construction site dewatering would be conducted in accordance with applicable permits. No impact is expected.

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?

No Impact. There is no existing housing, and none is planned for the Project. There would be no impact.

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

Less than Significant Impact. The Project would place structures, the newly constructed fish passage improvements, within the 100-year flood hazard area. The Project has been designed to minimize any impacts to flood control and would not impede or substantially redirect flood flows (Michael Love & Associates 2014a). Consequently, Project-related impacts are expected to be less than significant.

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?

No Impact. There are no levees or dams in the Project area. The Project has been designed to avoid impacts to flood control; no change in flood conveyance capacity is expected. Limited flooding currently occurs at 100-year flows, and the same level of flooding would persist following the project. There would be no impact on flooding.

j) Inundation by seiche, tsunami, or mudflow?

No Impact. The potential for a tsunami along the City of Pinole shoreline is low (City of Pinole 2010a). The lowest portion of the Project (post-construction) would be at 28.8 feet NAVD (nearly 30 feet above mean sea level), and the Project site is about 8,000 feet from the Bay. Thus, no impacts are expected from tsunamis or seiches. Also, the Project would not create any unstable slopes; thus there would be no Project-related impacts from mudflows.

3.10.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.11 LAND USE AND PLANNING

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

3.11.1 Environmental Setting

Existing Land Uses

The Pinole Creek Fish Passage Improvement Project (Project) would be located at the crossing of Pinole Creek at I-80, approximately 100 yards west of the junction of I-80 and Pinole Valley Road. The entire Project site lies within property owned by Caltrans and the Flood Control District and is used for ware conveyance (creek flow) and flood control purposes.

The Project site is located in a portion of the Pinole Creek watershed characterized by urban development. At the Project site Pinole Creek passes beneath I-80 via dual concrete box culvert bays that are 12 feet wide by 10 feet tall and approximately 320 feet in length. Concrete aprons at the inlet and outlet increase the overall length of the concrete culvert system to 393 feet. Each culvert bay has multiple slopes ranging from nearly flat in the downstream most 130 feet to a slope of 1.77% in the upstream-most section (Michael Love & Associates 2013a).

3.11.2 Regulatory Setting

There are no Federal and State laws and regulations pertaining to this issue area. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The site is located within the City of Pinole in Contra Costa County. The site is not designated with any City’s General Plan designation but is adjacent to the Pinole Valley Road Corridor Specific Plan. One of the goals of that plan is to build up:

Pinole Valley road’s history as a shopping and service corridor, attracting new retail, medical, facilities and high-density residential development, while simultaneously improving open space, enhancing Pinole Creek, and improving automobile flow and pedestrian traffic and bicycle circulation.

The City's General Plan also has a Community Character goal of:

Emphasize and enhance the visual and physical connection between the City's physical environment and the community's quality of life.

3.11.3 Impact Analysis

a) Physically divide an established community?

No Impact. The Project site is located adjacent to commercial and open space areas and underneath the I-80 overpass. It would not affect established communities and consequently there is no impact.

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?

No Impact. The Project would not conflict with a land use plan, policy or regulation. The Project is recommended in several plans including the City's General Plan as a beneficial use of the Project site.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. There are no habitat conservation plans or natural community conservation plans that include this part of Contra Costa County. The Pinole Creek Watershed Vision Plan (Urban Creeks Council and RDG 2004) does include goals to:

- Restore habitat for native fish and wildlife species.
- Modify culverts and other structures as necessary to provide for fish passage (e.g., I-80 culvert).

The enhancement of fish passage through the culverts in Pinole Creek is considered an improvement to the existing fish habitat, especially for the endangered steelhead population and therefore a beneficial use of the site. There are no adverse impacts.

3.11.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.12 MINERAL RESOURCES

MINERAL RESOURCES - Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.12.1 Environmental Setting

There are several active quarry mining operations in the Contra Costa County (County); however, none of these mines are located near the project site. The County, in conjunction with the State, has identified significant aggregate resource areas at Mount Zion, Mount Diablo, Port Costa and in the area of Byron (Contra Costa County 2005). Potential mining areas are not located at or near the project site.

3.12.2 Regulatory Setting

There are no Federal and State laws and regulations pertaining to this issue area. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The Conservation Element of the Contra Costa County General Plan 1995-2020 includes goals and policies to assist the County in meeting its defined mineral resource conservation and utilization needs (Contra Costa County 2005). No Conservation goals or policies are applicable to the project site. The County has policies that recognize the value of mineral resources as a supply for construction-related materials to accommodate local development as well as a source of significant employment.

The City of Pinole (City) did not identify any mineral resources within the General Plan (City of Pinole 2010c).

3.12.3 Impact Analysis

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?

No Impact. The Project site is not located within the Mineral Resource Areas identified in the Contra Costa County General Plan (Contra Costa County 2005). No mineral resource areas are identified in the City of Pinole General Plan (2010). No impact related to the loss of availability of a known regionally or locally important mineral resource would result from the proposed Project.

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?

No Impact. The Project site is not located within the Mineral Resource Areas identified in the Contra Costa County General Plan (Contra Costa County 2005). No mineral resource areas are identified in the City of Pinole General Plan (2010). No impact related to the loss of availability of a known regionally or locally important mineral resource would result from the proposed Project.

3.12.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.13 NOISE

NOISE – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.13.1 Environmental Setting

Ambient Noise Environment

According to the City of Pinole’s General Plan Update (City of Pinole 2010c), the ambient noise environments in the City of Pinole are defined primarily by vehicle traffic on Interstate 80 (I-80), and railroad activities conducted along the Union Pacific Railroad (UPRR) and Burlington Northern Santa Fe (BNSF) railroad corridors. Local vehicle traffic and typical neighborhood noise sources contribute to the ambient noise environment to a lesser extent. No significant noise-producing commercial or industrial activities are identified within the City of Pinole. The only concentration of such activities is in proximity to I-80, which tends to mask noise generated by these sources (City of Pinole 2010c). According to the Draft EIR for the General Plan Update, the project work area is located within the estimated 70 dBA noise contour associated with I-80; the staging areas are located within the estimated 65 dBA noise contour associated with I-80.

Sensitive Receptors

In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive. Sensitive receptors in the vicinity of the Project area include Collins Elementary School and Patty's Pinole Child Care, both located north of Henry Avenue to the north of the Project area, and residences on the west side of Pinole Creek both north and south of I-80.

3.13.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans identify general principles intended to guide and influence noise generating activities.

City of Pinole

The Project is located within the City of Pinole. The City does not have a noise ordinance; however construction hours of operations for excavation and grading are regulated (City of Pinole Municipal Code Section 15.36.250), and are limited to the period of 7 a.m. to 6 p.m. Monday through Friday, and 8 a.m. to 5 p.m. on Saturdays. The general provisions applying to Title 15 (Buildings and Construction) of the municipal code indicate that construction may occur from 7 a.m. to 5 p.m. Monday through Friday, and 9 a.m. to 6 p.m. on Saturdays (Saturday work is allowed as long as it is interior work and does not generate significant noise). The Noise Element of the City of Pinole's General Plan includes policies that address existing and foreseeable noise problems within the City (City of Pinole 2010c); however, these policies are focused on development and existing noise sources, and do not specifically address construction-related noise.

3.13.3 Impact Analysis

a) Result in 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?

Less Than Significant Impact. Construction equipment used by the project would generate noise. However, the majority of the work would occur below or immediately north of I-80. The work would occur primarily in the bottom of the creek, approximately 10 feet below the adjacent land surface. Work would be of relatively short duration (the total construction period would be approximately 9 to 10 weeks), and would occur only during allowable construction hours. On the north side of I-80, the land use immediately adjacent to the active work area is commercial (the AMF Pinole Valley Lanes bowling alley). The closest residences north of I-80

are approximately 400 feet northwest, located on a hill. South of the freeway, a shopping center is located east of the creek, and residences are located within 150 feet southwest of the active work area. There is extensive vegetation (trees and shrubs) between the creek and the residences.

As commercial areas, neither the bowling lane nor the shopping center would be considered a sensitive noise receptor. Construction activities on the south side of I-80 would be of short duration and require very little construction equipment. Activities would be limited to construction of the short training wall, installation of the coffer dam and piping to reroute creek flows, and cutting (sawing) of the concrete in the culvert to create the fishway passage. These are short-term activities are estimated to require no more than 5 weeks total. Because the construction would be of short duration, is located in the creek bed, noise would be partially shielded by the presence of vegetation and the high background noise level from I-80 (which tends to mask other sounds), and construction would occur only during hours permitted by the municipal code, potential noise exposure to residents located southwest of the active work area is considered to be less than significant.

Residents located northwest of the active work area are located at a greater distance from the construction activities, and the elementary school and day care center are farther away from the active work area than the residences. Construction activities on the north side of the culvert would include creation of the staging area, limited concrete work (construction of the training wall and sill), grading, and delivery and placement of RSP and ESM. As with the construction south of I-80, these are short-term activities, and are expected to require no more than 3 to 4 weeks. Because the construction would be of short duration, is primarily located in the creek bed, is partially shielded by the high background noise level from I-80, and construction would occur only during hours permitted by the municipal code, potential noise exposure to residents and other sensitive receptors located north of the active work area is considered to be less than significant.

b) Result in exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Less than Significant Impact. Use of equipment causing ground-borne vibration would be limited to the jackhammer that may be needed during construction of the fishway notch. Jackhammering would be conducted if there is concrete that cannot be removed using a concrete saw. Most of the jackhammering, if required, would occur underneath or directly adjacent to I-80. All construction activities would occur during construction work hours set by the City of Pinole. Given the limited scope of these activities, and when they would be conducted, this potential impact is less than significant. The jack hammer is estimated to be used for a total of no more than 24 hours during the entire project (Michael Love Pers. Comm. 2014a,b); work involving the jack hammer would occur over an approximately 5 to 6 week period, and include work in the culvert underneath I-80. Due to the location of the work and limited duration, this impact would be less than significant.

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

No Impact. There would be no permanent increase in noise associated with the project. The only on-going activities would consist of periodic inspections and monitoring, and potentially removal of debris, if warranted. Monitoring and inspections would not cause any increase in noise. Removal would be a continuation of the necessary debris removal already occurring as part of the maintenance of the flood conveyance capacity of the creek and culverts.

d) Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Less than Significant Impact. Following construction, the proposed Project would not be expected to generate noise above existing levels. Operations and maintenance activities would be similar in scope and extent to activities currently being conducted.

Heavy equipment would be in use during construction. The equipment that could be used, and noise levels that could be generated by the equipment is shown in Table 3.13-1. Because several pieces of equipment may be running simultaneously, total noise levels were calculated for the two phases of work that would involve the most construction equipment: construction of the fishway notch, and placement of ESM and RSP. Noise is measured on a logarithmic scale; total noise levels are therefore heavily influenced by the loudest noise source, and the addition of other (quieter) sources has only a small effect on the total noise level.

Table 3.13-1. Maximum Estimated Noise Levels of Proposed Project Equipment

Project Equipment	Noise Levels in dBA at 50 feet
Front-end loader	79
Dump truck	76
Excavator	81
Roller	80
Track loader	85
Vibratory compactor	83
Concrete saw	90
Jackhammer	89
Cement mixer/Concrete pump truck	79
Street sweeper	82
Water truck	88
Pump	81

Source: FHWA 2014.

The likely maximum (worst case) noise levels on the north side of I-80 would occur while ESM and RSP are placed, as a dump truck, excavator, front-end loader, and the dewatering pump could all be operating simultaneously. Based on the noise levels shown above, the estimated noise level from all of these items of equipment combined would be approximately 86 dBA at 50 feet from the equipment. For work on the south side of and in the culvert, the maximum equipment use is likely to consist of a concrete saw, jack hammer, concrete mix/pump truck, and dewatering pump. The combined worst case noise level for these items of equipment would be approximately 93 dBA at 50 feet from the equipment.

Noise levels drop approximately 6 dB with every doubling of distance (shielding from topography, wind and other factors may affect this estimate). Thus, the closest residential receptors southwest of the active work area may be exposed to noise levels of up to 87 dBA during times when the noisiest equipment is running at high loads on the apron of the culvert. However, this estimate does not account for the fact that the nearest residences are located well above creek (more than 10 feet above the noise sources), and that there is a dense stand of trees and shrubs between the creek and the closest residences. Sensitive receptors on the northwest side of I-80 could be exposed to noise levels of approximately 68 dBA, which is an acceptable exterior noise level for residential areas. While construction noise on the south side of the culvert could periodically exceed the acceptable exterior noise levels for residential areas, noise from the construction activities would also be partially masked by noise from I-80. Furthermore, all construction activity would occur during the hours permitted by the City of Pinole municipal code. Consequently, this potential impact is less than significant.

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?

No Impact. The proposed Project is not located within two miles of a public use airport, and would not expose people to excessive airport noise. No impact would occur.

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?

No Impact. The proposed Project is not located within the vicinity of a private airstrip, and would not expose people to excessive airport noise. No impact would occur.

3.13.4 Mitigation Summary

The Project would not result in any potentially significant impacts; therefore, no mitigation is required.

3.14 POPULATION AND HOUSING

POPULATION AND HOUSING – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.14.1 Environmental Setting

The city of Pinole has a population of approximately 20,000. The housing is primarily made up of single family dwellings although there are also a small number of multi-family homes and mobile homes. There are no residential units immediately adjacent to the project site. Across the Pinole Creek channel from the Flood Control District’s east access road and the potential alternative City staging area are residential units along Silver Oak Court and Oak Hollow Court. Private residences are also located southwest of the culvert in close proximity to the creek, on Sarah Court.

3.14.2 Regulatory Setting

No Federal or State laws relevant to this issue area are applicable to the Project. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The City has a Housing Element that is included as part of the General Plan update (City of Pinole 2010c) which addresses population and housing. It includes goals to address the City’s following relevant public service goals (City of Pinole 2010c):

- Ensure and maintain a high level of public safety within the community.
- Provide adequate and high quality recreational opportunities within the community.
- Ensure the provision of adequate and high-quality educational facilities to serve the community.

3.14.3 Impact Analysis

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)?

No Impact. The proposed Project would not generate any infrastructure for people. It would only benefit fish and other wildlife resources. The construction duration of the proposed Project would be approximately 9 to 10 weeks which would not induce any population growth. No impact would occur.

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

No Impact. The proposed project would not displace any residential housing units or require replacement housing. All work would be within the creek or culvert, and staging would occur on flood control land or at the alternate staging sites adjacent to Pinole Creek. The work would not affect any housing; no impact would occur.

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

No Impact. The proposed Project would not displace any people or require replacement housing. No impact would occur.

3.14.4 Mitigation Summary

The Project would not result in any impacts; therefore, no mitigation is required.

3.15 PUBLIC SERVICES

PUBLIC SERVICES	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
(i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(ii) Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
(v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.15.1 Environmental Setting

Fire Protection

The City of Pinole maintains two fires stations with Station 73 being the closest to the Project site. The Pinole Fire Department has been consolidated with the Rodeo/Hercules Fire Protection District and Contra Costa County Consolidated Fire Protection District (Confire) into a single Battalion to enhance response times. The Fire Department maintains the fire roads and fire breaks and patrols the open space with the help of the City’s Police Department. The Project site is not within a Calfire “Very High fire Hazard Severity Zone” (City of Pinole 2010c).

Police Protection

Police protection services are provided by the City of Pinole Police Department which is responsible for the enhancement and maintenance of public safety. The Police Department responds to all local areas and criminal activity on I-80.

Schools

The City is within the West Contra Coat County Unified School District and also has several private schools.

Parks

The City has 358 acres of regional, community and neighborhood parks as well as Open Space areas.

Other Public Facilities

There are no other public facilities in the vicinity of the proposed Project site.

3.15.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

The entire Project site is within the City. The City has a variety of policies to promote the safe and sustainable use of its public services. The City has adopted the Uniform Fire code and the Uniform Building Code to ensure adequate fire protection throughout the City. The City has the following relevant public service goals (city of Pinole 2010c):

- Ensure and maintain a high level of public safety within the community.
- Provide adequate and high quality recreational opportunities within the community.
- Ensure the provision of adequate and high-quality educational facilities to serve the community.

3.15.3 Impact Analysis

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:

(i) Fire protection?

No Impact. The proposed Project would pose a low fire risk, and no need for increased fire protection services is expected; consequently, there would be no need for changes to or new facilities. There would be no impact.

(ii) Police Protection?

No Impact. The proposed Project would not create a significant need for additional police protection; consequently, there would be no need for changes to or new facilities. There would be no impact.

(iii) Schools?

No Impact. The proposed Project would not increase the local population. Consequently, there would be no need for additional schools, or changes to existing schools. No impact would occur.

(iv) Parks?

No Impact. The proposed Project would not increase the local population. Consequently, there would be no need for additional parks, or changes to existing parks. The proposed project does not include any park construction. No impact would occur.

(v) Other public facilities?

No Impact. The proposed Project would not create the need for any new government facilities, and it would not require alterations to any existing government facilities. No impact would occur.

3.15.4 Mitigation Summary

The Project would not result in any impacts; therefore, no mitigation is required.

3.16 RECREATION

RECREATION	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

3.16.1 Environmental Setting

The City has 358 acres of regional, community and neighborhood parks. There are also approximately 344 acres of open space areas defined as unimproved park land and public as well as other open space holdings owned by EBMUD, West Contra Costa Unified School District, homeowners associations and private landowners within the city limits (City of Pinole 2010c). The City also has several paved regional and local trails.

3.16.2 Regulatory Setting

There are no Federal and State laws and regulations pertaining to this issue area and relevant to the proposed Project.

A Recreation, Park and Facility Master Plan has been developed to address the recreational needs of the City. One of the proposed improvements included in the General Plan is to connect the existing trail along Pinole Creek to the EBMUD watershed land with a continuous trail from the Bay to the City’s ridges.

3.16.3 Impact Analysis

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?*

No Impact. The Project would not increase the use of neighborhood or regional parks. The Project does not propose to build new residential facilities or add any population to the area. There would be no impact.

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?

No Impact. There would be a short term closure and rerouting of the Flood Control District's access road that is used as a pedestrian and bike path. After construction is completed the access road would be reopened. The proposed Project would not include or require the construction or expansion of recreational facilities. Therefore, the proposed Project would result in no impact to recreational resources.

3.16.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.17 TRANSPORTATION/TRAFFIC

TRANSPORTATION/TRAFFIC – Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.17.1 Environmental Setting

The Project area is located in the City of Pinole, under and immediately adjacent to I-80. The Project area is not directly accessible by public road; it is accessed via the Flood Control District access road. The access road can be accessed via the southwest corner of the AMF Pinole Valley Lanes bowling alley parking lot, the City of Pinole Henry Avenue parking lot, and Henry Avenue. As discussed in Section 2, the access road, the City of Pinole Henry Avenue parking lot, or the southwest corner of the bowling alley parking lot may be used as staging areas (see Figure 2). They are therefore considered potential entry points into the Project area.

While some construction activities would occur south of and under I-80, all vehicle access to the Project area, including any of the possible staging areas, would occur north of I-80. Henry Avenue, the AMF Pinole Valley Lanes parking lot, and the City of Pinole Henry Avenue parking

lot are all accessed from Pinole Valley Road, a major thoroughfare. In this area Pinole Valley Road is a four-lane arterial with a curbed and landscaped median. Construction-related traffic is expected to exit from I-80 onto Pinole Valley Road northbound. A signalized intersection with pedestrian crosswalks and a dedicated left turn lane provides access from Pinole Valley Road to the City's Henry Avenue parking lot. The intersection of Henry Avenue and Pinole Valley Lane is also a signalized intersection with pedestrian crosswalks; a dedicated left-bound turn lane is provided from northbound Pinole Valley Road onto west-bound Henry Avenue. Henry Avenue is a two-lane road with on-street parking on both sides. The City's Henry Avenue parking lot can also be access from Henry Avenue, requiring a left turn across the eastbound lanes of Henry Avenue. Access to the AMF Pinole Valley Lanes parking lot would require a U-turn at either of the two intersections described above; there is no direct access to the AMF Bowling Alley parking lot from northbound Pinole Valley Road.

Collins Elementary School is located the intersection of Tennant Ave and Ellerhorst Street with Pinole Valley Road, north of Henry Avenue. It is accessed from the signalized intersection at Pinole Valley Road. The childcare center is accessed from Henry Avenue west of the entrance into the Henry Avenue parking lot, and east of the direct access from Henry Ave onto the Flood Control District access road.

Pinole Valley Road is bordered by pedestrian walkways on both sides. A bicycle and pedestrian path in poor condition is located immediately north of I-80, and intersects the Flood Control District access road at Pinole Creek. The Flood Control District access road is also used as a bike and pedestrian path. During construction, the section of the access road between the Henry Avenue bridge and I-80 would be temporarily closed to public use. The Project area does not include any mass transit facilities.

The connected transportation corridors of the Bay Area would serve the transportation needs of the proposed Project. Interstate 80 (I-80) and State Route 4 (SR-4) are the major regional transportation corridors within vicinity of the Project area. The access routes for the proposed Project would consist of Interstates, State highways, local county- and city-maintained roads, and private roads. Construction-related traffic would enter the staging areas from Pinole Valley Road or Henry Road.

The most likely source of ESM and RSP would be the Syar Industries Quarry at 885 Lake Herman Road, Vallejo. This location may also provide the concrete, unless a more local supplier is identified. The most likely recycling (concrete rubble) and disposal (excavated soil) location would be the West Contra Costa Landfill in Richmond.

Project workforce personnel (three to five workers may be required for the proposed Project at any one time) would likely drive to the site using Pinole Valley Road and I-80.

3.17.2 Regulatory Setting

Federal and State laws and regulations pertaining to this issue area and relevant to the Project are identified in Table 3-1. Local goals, policies, and/or regulations applicable to this issue area are summarized below.

Policies and goals pertaining to transportation and applicable to the Project can be found in the City 2010 General Plan Update (City of Pinole 2010c) and the City's Three Corridors Specific Plan (City of Pinole 2010d). The General Plan Update includes contains goals for circulation, each of which is supported by multiple policies. The goals and policies from the General Plan Update that may be applicable to the Project include (City of Pinole 2010c):

- Goal CE.2: Achieve a coordinated regional and local transportation system that minimizes traffic congestion and efficiently serves users.
- Goal CE.6: Reduce the amount of peak hour automobile congestion on city streets, as appropriate.
- Goal CE.7: Support bicycle use as a mode of transportation by enhancing infrastructure to accommodate bicycles and riders.
- POLICY CE.3.1: Apply the traffic service objectives indicated on Figure 7.4 [of the Circulation Element] for the identified roadways.
- POLICY CE.3.2: Maintain roadway network at or above established LOS thresholds.
- POLICY CE.7.3: Establish a network of multi-use paths to facilitate safe and direct off-street bicycle and pedestrian travel.

The policies are further supported by specific actions, and the Three Corridors Specific Plan created to address the needs of I-80, San Pablo Avenue and Pinole Valley Road. In addition to the goals, policies and actions contained in the General Plan Update, the Three Corridors Specific Plan includes the following policy (City of Pinole 2010d):

- CIRCULATION POLICY 7: The City will ensure that there are clear rights-of-way for safe passage of pedestrians and bicyclists using San Pablo Avenue, Pinole Valley Road and Appian Way.

Finally, to encourage balanced transportation, the City of Pinole has LOS and Volume to Capacity Ratios for major road segments. The LOS threshold for Pinole Valley Road in the Project area is LOS E.

3.17.3 Impact Analysis

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?

Less than Significant Impact. Level of service (LOS) is a measure of effectiveness by which traffic engineers measure auto and truck service on existing or planned roadways. The definitions of the LOS measures are:

- LOS A: Traffic flowing freely
- LOS B: Generally unimpeded traffic flow
- LOS C: Slower but stable flow with minor delays
- LOS D: Reduced speeds and increased delays
- LOS E: Slow speeds and significant delays
- LOS F: Stop-and-go traffic, high level of delay

As stated in the Circulation Element of the City's General Plan (City of Pinole 2010c), according to projected volumes, the future auto traffic conditions in Pinole will generally function at acceptable LOS. The City's Three Corridors Specific Plan (City of Pinole 2010d) indicates that the minimum level of service for Pinole Valley Road is LOS E; at the time of publication of the Three Corridors Plan, the LOS on Pinole Valley Road, including at the ramps leading to and from I-80 ranged from LOS A to LOS C during the morning and evening peak commute hours. The addition of a limited volume of traffic to Pinole Valley Road (up to 25 trucks per day) would not adversely affect existing level of service.

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?

Less than Significant Impact. As stated above, Pinole Valley Road is currently at an acceptable LOS, even during the peak traffic periods. The relatively small number of trucks that would be required to move materials to and from the site (up to 25 per day, or 4 to 5 per hour, on average) would not adversely affect the existing LOS.

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?

No Impact. The proposed Project would not affect any airports and would not affect air traffic.

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

Less than Significant Impact. The proposed Project would not result in any new roads, and therefore there would be no impact due to design features. The Flood Control District access road may have weight, width, or turning limitations that would require use of smaller dump trucks to deliver rocks and other materials. The Traffic Control Plan would ensure that all vehicle traffic entering the Project area would be compatible with the access road and parking lots, if used.

e) Result in inadequate emergency access?

Less than Significant Impact. The proposed Project would slightly increase the number of heavy trucks on Pinole Valley Road (up to 25 trucks per day). The contractor would be required to develop a Traffic Control Plan. The Traffic Control Plan would ensure that adequate emergency access is provided along roads used by construction-related traffic. The potential impact is less than significant.

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?

Less than Significant Impact. During construction of the proposed Project the Flood Control District access road between I-80 and the Henry Avenue bridge over Pinole Creek would temporarily be closed to public use. Bicyclists may have to detour via Pinole Valley Road and Henry Avenue (a total detour distance of approximately 1,600 feet). The closure would last up to 10 weeks. The short-term nature of this closure and the availability of an alternate route make this impact less than significant.

3.17.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.18 UTILITIES AND SERVICE SYSTEMS

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

3.18.1 Environmental Setting

The City’s wastewater treatment is jointly managed with the City of Hercules at the Pinole/Hercules Water Pollution Control Plant. The City of Pinole Public Works Department maintains the sewer system in the area of the Project site. The City receives its water supply through the EBMUD.

3.18.2 Regulatory Setting

There are no Federal and State laws and regulations pertaining to this issue area and relevant to the proposed Project. Summarized below are the local goals, policies, and/or regulations applicable to this issue area.

Wastewater treatment and potable water supplies within the City are under the jurisdiction of the Regional Water Quality Control Board (RWQCB) and other federal and state regulatory agencies. The regulations include the Clean Water Act and other regulations.

3.18.3 Impact Analysis

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

No Impact. There would be no effect on any wastewater treatment facility because the Project would not discharge into a treatment facility.

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?

No Impact. There would be no effect on water or wastewater treatment facilities or expansion of existing facilities. The Project would not require significant water sources and there would be no discharge into a treatment facility.

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?

No Impact. The Project would not result in construction of new or expansion of any storm water drainage facilities.

d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. There would be sufficient water supply to serve the Project during the short-duration construction period. The Project would not require new or expanded entitlements to water supply.

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?

No Impact. The proposed Project would not affect the existing wastewater treatment system.

f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?

Less than Significant Impact. Solid waste disposal would be made up of a small amount of construction debris and recyclable material. There would be sufficient capacity at existing facilities.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

No Impact. The Project would comply with all federal, state and local statutes and regulations related to solid waste. As stated in Section 2, the Project would dispose of or recycle all the construction debris.

3.18.4 Mitigation Summary

The Project would not result in significant impacts; therefore, no mitigation is required.

3.19 MANDATORY FINDINGS OF SIGNIFICANCE

MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of past, present and probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3.19.1 Impact Analysis

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less than Significant Impact. The Project could potentially briefly disturb habitat for sensitive species and thus briefly degrade the quality environment within the Project area. However, these impacts can be avoided or minimized as described in the Project Description and would be inherently limited due to the temporary and short duration (9 to 10 weeks) of the proposed Project. The proposed Project would not be expected to 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, or reduce the number or restrict the range of a rare or endangered plants or animals. The purpose of the proposed Project is to benefit the migration of steelhead and expand its range as well as the range of other fish species using Pinole Creek. After completion the proposed Project would be expected to benefit fish species. The proposed Project would not be expected to impact major periods of California history or prehistory.

b) Does the project have impacts that would be 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.)

Less than Significant Impact. Potential impacts from the proposed Project would be less than significant levels through the Project design as described in the Project Description, and through implementation of mitigation measures. The Project construction would occur during a short (9 to 10 weeks) and temporary construction period. If minor impacts were to occur, they would be limited to a very small area. There are no recently-completed, current or reasonable foreseeable future creek bed projects in the immediate vicinity of the Project area. The Project does not propose any new development, and proposed construction activities are very limited in extent; therefore the project would not be expected to lead to cumulative environmental effects when combined with other development projects in the area.

c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Less than Significant Impact. The proposed Project would not create substantial adverse effects on human beings due to its short duration and limited Project area. In addition, measures were included in the Project Description to minimize potential adverse effects.

4.0 MITIGATION MONITORING AND REPORTING PROGRAM

4.1 AUTHORITY

The California Environmental Quality Act (CEQA) directs lead agencies to adopt, concurrent with adoption of a Mitigated Negative Declaration (MND), a program for reporting or monitoring the changes that have been incorporated into the project or that have been made a condition of approval to mitigate or avoid significant environmental effects. This Draft Mitigation Monitoring and Reporting Program (MMRP), presented in Table 4-1, has been prepared to provide a summary and discussion of the ways in which CCRCO, as the CEQA lead agency for the Project, would ensure the measures identified in the MND are implemented. CCRCO would remain responsible for ensuring all measures are implemented in accordance with the MMRP. Should CCRCO adopt the MND after considering it together with any comments received during the public review process, it would adopt a final MMRP in compliance with CEQA. (See Pub. Resources Code § 21081.6, subd. (a); State CEQA Guidelines, § 15074, subd. (d), § 15097.)

4.2 MITIGATION COMPLIANCE RESPONSIBILITY

CCRCO is responsible for successfully implementing all mitigation measures in the MMRP, and for assuring that these requirements are met by its construction contractors and all field personnel. Additional avoidance and minimization measures not reflected in this MMRP may be imposed by applicable agencies with jurisdiction through their respective permit processes.

4.3 GENERAL MONITORING AND REPORTING PROCEDURES

CCRCO is responsible for integrating the mitigation monitoring procedures into the Project implementation process by ensuring that the construction contractor and other field personnel are aware of the requirements to protect cultural resources (obtaining awareness training records), and maintaining regular contact with the construction supervisor.

4.4 MITIGATION AND MONITORING TABLE

The following mitigation monitoring table shows the two mitigation measures identified in Section 3 of the MND. The table includes the following information, by column:

- Potential Impact,
- Mitigation Measure,
- Location,
- Monitoring/reporting action,
- Responsible agency/party, and
- Timing.

Table 4-1. Mitigation Monitoring and Reporting Program

Mitigation Measure No.	Mitigation Measure Description	Organization Responsible for Implementation	Timing	Monitoring/Reporting Responsibility	Monitoring Schedule
Cultural and Paleontological Resources					
MM CUL-1: Inadvertent Encounter of Undiscovered Archeological and/or Human Remains.	<p>All site workers shall be trained to recognize potential buried artifacts and shall be informed about the appropriate procedures should buried artifacts or human remains be encountered. If buried cultural resources, such as chipped or ground stone, large quantities of shell, historic debris, or building foundations are discovered inadvertently during ground-disturbing activities, work shall stop in that area and within 100 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with CCCRD, other agencies, and Native American representatives as appropriate.</p> <p>If human skeletal remains are encountered, the county coroner shall be contacted immediately. If the county coroner determines that the remains are Native American, the coroner will then be required to contact the Native American Heritage Commission (pursuant to Section 7050.5 (c) of the California Health and Safety Code) and the County Coordinator of Indian Affairs. A qualified cultural resources specialist also shall be contacted immediately.</p>	CCCRD (through its contractor and a qualified archeological consultant)	Prior to construction and anytime a new construction crew member starts work; As-needed during construction	CCCRD	Throughout construction

Mitigation Measure No.	Mitigation Measure Description	Organization Responsible for Implementation	Timing	Monitoring/ Reporting Responsibility	Monitoring Schedule
	<p>If any human remains are discovered in any location, there shall be no further work or disturbance of the location or any nearby area reasonably suspected to overlie adjacent human remains until:</p> <ul style="list-style-type: none"> • the county coroner has been informed and has determined that no investigation of the cause of death is required; and • if the remains are of Native American origin, <ul style="list-style-type: none"> • the descendants of the deceased Native American(s) have made a recommendation to the landowner or CCRCDC for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in Public Resources Code Section 5097.98; or • the Native American Heritage Commission was unable to identify a descendant, or the descendant failed to make a recommendation within 24 hours after being notified by the commission. 				

Mitigation Measure No.	Mitigation Measure Description	Organization Responsible for Implementation	Timing	Monitoring/Reporting Responsibility	Monitoring Schedule
MM CUL-2: Inadvertent Encounter of Undiscovered Paleontological Resources	In the event that buried paleontological resources are encountered during Project grading, site preparation, or construction, work shall be suspended within 50 feet of the discovery and the City of Pinole Planning Department shall be immediately notified. The City shall coordinate any necessary investigation with a qualified paleontologist who can assess the significance of the find and provide appropriate management recommendations.	CCCRD (through its contractor and a qualified paleontologist)	As needed if unanticipated paleontological resources are encountered.	CCCRD	Throughout construction

5.0 DOCUMENT PREPARATION

The Initial Study and Mitigated Negative Declaration were prepared by the following consultants:

GAIA Consulting Inc. (CEQA Document Preparation)
Susanne von Rosenberg, Project Manager
Susa Gates, Senior Scientist

Michael Love & Associates (Project Design and Engineering)
Michael Love, Principal Engineer

Pacific Biology (Biological Resources Evaluation)
Josh Phillips

Lux Environmental Consulting, LLC
April Zohn

6.0 REFERENCES

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APPENDIX A

**NMFS STEELHEAD PROTECTION AND MINIMIZATION MEASURES THAT MAY
APPLY TO THE PROJECT
(EXCERPTED FROM THE NMFS 2006 PROGRAMMATIC BIOLOGICAL OPINION)]**

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APPENDIX A
PROTECTION AND MINIMIZATION MEASURES THAT MAY APPLY TO THE PROJECT

Measures excerpted from: *Protection and Minimization Measures from the Programmatic Biological Opinion for Permitting of Fisheries Restoration Projects within the Geographic Boundaries of NMFS' Santa Rosa, California, Field Office (BO)*

(Note: This is not a list of all Protection and Minimization measures included in the Programmatic BO)

The following protection and minimization measures, as they apply to a particular project, would be incorporated into the project descriptions for individual projects authorized under the Programmatic Biological Opinion for Permitting of Fisheries Restoration Projects within the Geographic Boundaries of NMFS' Santa Rosa, California, Field Office for programmatic fisheries restoration projects (Program).

A. General Protection Measures

1. Work shall not begin until the U.S. Army Corps of Engineers (Corps) has notified the permittee that the requirements of the Endangered Species Act (ESA) have been satisfied and that the activity is authorized.

2. The general construction season will be from June 15 to October 15. Restoration, construction, fish relocation, and dewatering activities within any wetted and/or flowing creek channel shall only occur within this window. As such, all non-revegetation-associated earthmoving activities will be complete by October 15. Revegetation outside of the active channel may continue beyond October 15 until November 15, if necessary. Limited earthmoving associated with preparation of the site for revegetation may occur within the October 15 -November 15 timeframe, but only as necessary for revegetation efforts. Work beyond this time frame may be authorized following consultation with and approval of the National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) on an individual project basis, provided it could be completed prior to the first significant rainfall event (rainfall event > two inches).

3. Prior to construction, each contractor will be provided with the specific protective measures to be followed during implementation of the project. In addition, a qualified biologist will provide the construction crew with information on the listed species in the project area, the protection afforded the species by the ESA, and guidance on those specific protection measures that must be implemented as part of the project.

4. All adverse aquatic impacts, including temporary impacts, must proceed through a sequencing of impact reduction: avoidance, reduction in size of impact, and compensation (mitigation). Mitigation may be proposed to compensate for the adverse impacts to water of the United States. Mitigation shall generally be in kind, with no net loss of waters of the United States on a per project basis. Mitigation work shall proceed in advance or concurrently with project construction.

5. Construction within 200 feet of established riparian vegetation or other bird nesting habitats shall be avoided during the migratory bird nesting season (February 15 - August 1), to avoid damage or disturbance to nests. If construction must occur during this period, a qualified biologist or individual approved by CDFW will conduct a pre-construction survey for bird nests or nesting activity in the project area. If any active nests or nesting behaviors are found (for native species), an exclusion zone of 75 feet shall be established to protect nesting birds (200 ft. for raptors) and maintained until birds have

fledged or nest is abandoned. If any listed or sensitive bird species are identified, CDFW will be notified prior to further action. Take of active bird nests is prohibited under this Program

6. Poured concrete shall be excluded from the wetted channel for a period of 30 days after it is poured. During that time the poured concrete shall be kept moist, and runoff from the concrete shall not be allowed to enter a live stream. Commercial sealants may be applied to the poured concrete surface where difficulty in excluding water flow for a long period may occur. If sealant is used, water shall be excluded from the site until the sealant is dry and fully cured according to the manufacturer's specifications.

7. Herbicides may be applied to control established stands of non-native species including, but not limited to, vinca, ivy, and broom. Herbicides must be applied to those species according to the registered label conditions. Herbicides must be applied directly to plants and may not be spread upon any water. Herbicides will be tinted with a biodegradable dye to facilitate visual control of the spray.

8. Rock used for bank stabilization or to anchor large woody debris (LWD) structures, shall be large and heavy enough to remain stationary under the 100-year median January or February flow event (whichever is greater).

9. If the thalweg of the stream has been altered due to construction activities, efforts will be undertaken to reestablish it to its original configuration. (*Note: Projects that may include activities such the use of willow baffles which may alter the thalweg are allowed under the Program.*)

B. Requirements for Fish Relocation and Dewatering Activities

1. Guidelines for Dewatering:

Project activities authorized under the Program may require fish relocation and/or dewatering activities. Dewatering may not be appropriate for some projects that will result in only minor input of sediment, such as placing logs with hand crews or helicopters, or installing boulder clusters. Adherence to these general guidelines will minimize potential impacts for projects that do require dewatering of a stream/creek:

- a. In those specific cases where it is deemed necessary to work in a flowing stream/creek, the work area shall be isolated and all the flowing water shall be temporarily diverted around the work site to maintain downstream flows during construction. Dewatering will likely not be necessary for most LWD enhancement activities.
- b. Exclude fish from reentering the work area by blocking the stream channel above and below the work area with fine-meshed net or screens. The bottom of the seine must be completely secured to the channel bed to prevent fish from reentering the work area prior to dewatering. Exclusion screening must be placed in areas of low water velocity to minimize fish impingement. Screens must be checked periodically and cleaned of debris to permit free flow of water. Block net mesh shall be sized to ensure salmonids upstream or downstream do not enter the areas proposed for dewatering between passes with the electrofisher or seine.
- c. Prior to dewatering, determine the best means to bypass flow through the work area to minimize disturbance to the channel and avoid direct mortality of fish and other aquatic vertebrates (as described more fully below under *General Conditions for Fish Capture and Relocation*). The project applicant shall bypass stream flow around the work area and concurrently maintain the stream flow to channel below the construction site.

- d. Coordinate project site dewatering with a qualified biologist to perform fish and amphibian relocation activities. The qualified biologist(s) will possess a valid State of California Scientific Collection Permit as issued by CDFW and will be familiar with the life history and identification of listed salmonids and listed amphibians within the action area.
- e. Prior to dewatering a construction site, qualified individuals will capture and relocate fish and amphibians to avoid direct mortality and minimize take. This is especially important if listed species are present within the project site.
- f. Minimize the length of the dewatered stream channel and duration of dewatering. A maximum of 300 feet (ft.) may be dewatered under the Program. Exceeding the 300 ft. limit will disqualify the project from inclusion in the Program.
- g. Any temporary dam or other artificial obstruction constructed shall only be built from materials such as sandbags or clean gravel which will cause little or no siltation or turbidity. Vis queen shall be placed over sandbags used for construction of cofferdams to minimize water seepage into the construction areas. The visqueen shall be firmly anchored to the streambed to minimize water seepage. Cofferdams and the stream diversion systems shall remain in place and fully functional throughout the construction period.
- h. Downstream flows adequate to prevent stranding will be maintained at all times during dewatering activities.
- i. When cofferdams with bypass pipes are installed, debris racks will be placed at the bypass pipe inlet. Bypass pipes will be monitored a minimum of two times per day, seven days a week, during the construction period. All accumulated debris shall be removed by the contractor or project applicant.
- j. Bypass pipe diameter will be sized to accommodate, at a minimum, twice the summer baseflow.
- k. The work area may need to be periodically pumped dry of seepage. Place pumps in flat areas, well away from the stream channel. Secure pumps by tying off to a tree or stake in place to prevent movement by vibration. Refuel in an area well away from the stream channel and place fuel absorbent mats under pump while refueling. Pump intakes shall adhere to NMFS' *Fish Screening Criteria for Anadromous Salmonids* (NMFS 1997a). Check intake periodically for impingement of fish or amphibians.
- l. When pumping is necessary to dewater a work site temporary siltation basin are required to ensure sediment does not re-enter the wetted channel. Screens on pumps will adhere to NMFS' *Fish Screening Criteria for Anadromous Salmonids* (NMFS 1997a).
- m. When construction is completed, the flow diversion structure shall be removed as soon as possible in a manner that will allow flow to resume with the least disturbance to the substrate. Cofferdams will be removed so surface elevations of water impounded above

the cofferdam will not be reduced at a rate greater than one inch per hour. This will minimize the risk of beaching and stranding of fish as the area upstream becomes dewatered.

C. General Conditions for all Fish Capture and Relocation Activities

Fish relocation and dewatering activities shall only occur between June 15 and October 15 of each year.

1. Overview

All seining, electrofishing, and relocation activities shall be performed by a qualified fisheries biologist. The qualified fisheries biologist shall capture and relocate listed salmonids prior to construction of the water diversion structures (*e.g.*, cofferdams). The qualified fisheries biologist shall document the number of salmonids observed in the affected area, the number and species of salmonids relocated, and the date and time of collection and relocation. The qualified fisheries biologist shall have a minimum of three years field experience in the identification and capture of salmonids, including juvenile salmonids, considered in the biological opinion. The qualified biologist will adhere to the following requirements for capture and transport of salmonids:

- a. Determine the most efficient means for capturing fish. Complex stream habitat generally requires the use of electrofishing equipment, whereas in deep pools, fish may be concentrated by pumping-down the pool and then seining or dipnetting fish.
- b. Notify NMFS two weeks prior to capture and relocation of salmonids to provide NMFS an opportunity to attend (call Jonathan Ambrose at 707-575-6091 or via email at jonathan.ambrose@noaa.gov).
- c. Initial fish relocation efforts will be conducted several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional electrofishing passes immediately prior to construction. In many instances, additional fish will be captured that eluded the previous day's efforts.
- d. During dewatering, a fisheries biologist will remain at the project work site to net and rescue any additional fish that may have become stranded throughout the dewatering process.
- e. In regions of California with high summer water temperatures, perform relocation activities during morning periods.
- f. Prior to capturing fish, determine the most appropriate release location(s). Consider the following when selecting release site(s):
 - i. similar water temperature as capture location;
 - ii. ample habitat availability prior to release of captured fish; and
 - iii. low likelihood of fish reentering work site or becoming impinged on exclusion net or screen.

- g. Periodically measure air and water temperatures. Cease activities when measured water temperatures exceed 17.8 degree Celsius (°C) (or 18.4°C in areas where coho salmon are not present). Temperatures will be continuously measured at the head-of-riffle tail-of pool interface during relocation activities.

2. Electrofishing Guidelines

The following methods shall be used if fish are relocated via electrofishing:

- a. All electrofishing will be conducted according to NMFS' *Guidelines for Electrofishing Waters Containing Salmonids Listed Under the Endangered Species Act*, June 2000,
- b. The backpack electrofisher shall be set as follows when capturing fish:

Voltage setting on the electrofisher shall not exceed 300

volts. Initial _____ Maximum

Voltage:	100 Volts	300 Volts
Duration:	500 µs (microseconds)	5 ms (milliseconds)
Frequency:	30 Hertz	70 Hertz;

- c. A minimum of three passes with the electrofisher shall be utilized to ensure maximum capture probability of salmonids within the area proposed for dewatering.
- d. No electrofishing shall occur if water conductivity is greater than 350 microSiemens per centimeter (1S/cm) or when instream water temperatures exceed 17.8° C (or 18.4° C in areas where coho salmon are not present). Water temperatures shall be measured at the pool/riffle interface. Only direct current (DC) shall be used⁶.
- e. A minimum of one assistant shall aid the fisheries biologist by netting stunned fish and other aquatic vertebrates.

3. Seining Guidelines

The following methods shall be used if fish are removed with seines:

- a. A minimum of three passes with the seine shall be utilized to ensure maximum capture probability of salmonids within the area.

⁶ Pinole Creek may not conform to these standards when the project will be initiated in the summer/fall months. Pinole Creek will definitely be above 350 microSiemens and may be above 18.4 degrees at the time of fish relocations. This NMFS guidelines were likely developed for coastal streams and do not represent conditions in local creeks flowing into the San Francisco Bay. Local creeks such as Pinole, San Pablo, San Leandro and others often have conductivities in the 600 to 900 microSeimens range during this time of the year. Temperatures of 18 to 20 degrees are common and the fish are adapted to these conditions. The Project would expect to encounter these conditions. Other options for capture such as seining would be exceedingly difficult to achieve in a manner that effectively captures fish due to the deep water, undercut banks and woody debris present at this site. Electrofishing is the best option for fish capture (Bert Mulchaey. Pers. Comm. 2014). The project proponent, CCRCD, may discuss alternate criteria given the typical stream conditions at Pinole Creek.

- b. All captured fish shall be processed and released prior to each subsequent pass with the seine.
- c. The seine mesh shall be adequately sized to ensure fish are not gilled during capture and relocation activities.

4. Guidelines for Relocation of Salmonids

The following methods shall be used during relocation activities associated with either method of capture (electrofishing or seining):

- a. Fish shall not be overcrowded into buckets; allowing approximately six cubic inches per 0+ individual and more for larger/older fish.
- b. Every effort shall be made not to mix (including use of separate containers) 0+ (young of the year) salmonids with larger salmonids, or other potential predators, which may consume the smaller salmonids. Have at least two containers and segregate ~~class~~ fish from larger age. Place larger amphibians, such as Pacific-giant salamanders (*Dicamptodon ensatus*), in container with larger fish.
- c. Salmonid predators, such as sculpins (*Cottus sp.*) and Pacific-giant salamanders, collected and relocated during electrofishing or seining activities shall not be relocated so as to concentrate them in one area. Particular emphasis shall be placed on avoiding relocation of sculpins and Pacific-giant salamanders into the steelhead and coho salmon relocation pools. To minimize predation on salmonids, these species shall be distributed throughout the wetted portion of the stream so as to not concentrate them in one area.
- d. All captured salmonids shall be relocated, preferably upstream, of the proposed construction project and placed in suitable habitat. Captured fish shall be placed into a pool, preferably with a depth of greater than two feet and with available instream cover (undercut banks, complex LWD features).
- e. All captured salmonids will be processed and released prior to conducting a subsequent electrofishing or seining pass.
- f. All native captured fish will be allowed to recover from electrofishing before being returned to the stream.
- g. Minimize handling of salmonids. However, when handling is necessary, always wet hands or nets prior to touching fish. Handlers will not wear DEET-based insect repellants during relocation activities.
- h. Temporarily hold fish in cool, shaded, aerated water in a container with a lid. Provide aeration with a battery-powered external bubbler. Protect fish from jostling and noise and do not remove fish from this container until time of release.
- i. Place a non-mercury thermometer in holding containers and, if necessary, periodically conduct partial water changes to maintain a stable water temperature. If water temperature reaches or exceeds those allowed by CDFW and NMFS, fish shall be immediately released.

If instream temperatures exceed authorized temperature limits, capture and relocation will cease.

- k. In areas where aquatic vertebrates are abundant, periodically cease capture, and release at predetermined locations.
- l. Visually identify species and estimate year-classes of fish at time of release. Count and record the number of fish captured. Avoid anesthetizing or measuring fish.
- m. If more than three percent of the steelhead and Southern Oregon/Northern California Coast (SONCC) Evolutionary Significant Unit (ESU) coho salmon, or one percent of CCC ESU coho captured are killed or injured, the project permittee shall contact NMFS' biologist Jonathan Ambrose by phone immediately at (707) 575-6091. If Mr. Ambrose cannot be reached, the Santa Rosa NMFS Office will be contacted at Federal Relay 1- 866-327-8877 ([707] 578-8555). The purpose of the contact is to review the activities resulting in the lethal take and to determine if additional protective measures are required. All steelhead and coho mortalities must be retained, placed in an appropriately sized whirl-pak or zip-lock bag, labeled with the date and time of collection, fork length, location of capture, and frozen as soon as possible. Frozen samples must be retained until specific instructions are provided by NMFS.

D. Measures to Minimize and Avoid Disturbance from instream Construction

Measures to minimize and avoid disturbance associated with instream habitat restoration construction activities are presented below:

1. If the stream channel is seasonally dry between June 15 and October 15, construction will occur during this dry period.
2. Debris, soil, silt, bark, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering the waters of the State. Any of these materials, placed within or where they may enter a stream or lake, by the applicant or any party working under contract, or with permission of the applicant, shall be removed immediately. During project activities, all trash that may attract potential predators of salmonids will be properly contained, removed from the work site, and disposed of daily.
3. Where feasible, the construction shall occur from the bank, or on a temporary pad underlain with filter fabric.
4. No mechanized equipment (with internal combustion engines), including internal combustion hand tools, will enter wetted channels.
5. Use of heavy equipment (in dewatered channels) shall be avoided in a channel bottom with rocky or cobbled substrate. If access to the work site requires crossing a rocky or cobbled substrate, a rubber tire loader/backhoe is the preferred vehicle. Only after this option has been determined infeasible will the use of tracked vehicles be considered. The amount of time this equipment is stationed, working, or traveling within the creek bed shall be minimized. When heavy equipment is used, woody debris and vegetation on banks and in the channel shall be minimally disturbed if outside of the project's scope.

6. Hydraulic fluids in mechanical equipment working within the stream channel shall not contain organophosphate esters. Vegetable-based hydraulic fluids are preferred.
7. The use or storage of petroleum-powered equipment shall be accomplished in a manner to prevent the potential release of petroleum materials into waters of the State (Fish and Game Code 5650).
8. Areas for fuel storage, refueling, and servicing of construction equipment must be located in an upland location.
9. Prior to use, clean all equipment to remove external oil, grease, dirt, or mud. Wash sites must be located in upland locations so wash water does not flow into the stream channel or adjacent wetlands.
10. All construction equipment must be in good working condition, showing no signs of fuel or oil leaks. Prior to construction, all mechanical equipment shall be thoroughly inspected and evaluated for the potential of fluid leakage. All questionable motor oil, coolant, transmission fluid, and hydraulic fluid hoses, fittings, and seals shall be replaced. The contractor shall document in writing all hoses, fittings, and seals replaced and shall keep this documentation until the completion of operations. All mechanical equipment shall be inspected on a daily basis to ensure there is no motor oil, transmission fluid, hydraulic fluid, or coolant leaks. All leaks shall be repaired in the equipment staging area or other suitable location prior to resumption of construction activity.
11. Oil absorbent and spill containment materials shall be located on site when mechanical equipment is in operation within 100 feet of the proposed watercourse crossings. If a spill occurs, (1) no additional work shall occur in-channel until the mechanical equipment is inspected by the contractor, and the leak has been repaired, (2) the spill has been contained, and (3) CDFW and NMFS are contacted and have evaluated the impacts of the spill.

E Measures to Minimize Degradation of Water Quality

Construction or maintenance activities for the projects covered under this Program may result in temporary increases in turbidity levels in the stream. In general, these activities must not result in significant increases in turbidity levels beyond the naturally occurring, background conditions. The following measures would be implemented to reduce the potential for impacts to water quality during and after construction:

1. General Erosion Control during Construction
 - a. Isolate the construction area from flowing water until project materials are installed and erosion protection is in place except as provided in Section B. Most large woody debris projects will not require dewatering.
 - b. Effective erosion control measures shall be in place at all times during construction. Do not start construction until all temporary erosion control devices (straw bales with sterile, weed-free straw, silt fences, *etc.*) are in place downslope or downstream of project site within the riparian area. The devices shall be properly installed at all locations where the likelihood of sediment input exists. These devices shall be in place during and after construction activities for the

purposes of minimizing fine sediment and sediment/water slurry input to flowing water and of detaining sediment-laden water on site. If continued erosion is likely to occur after construction is completed, then appropriate erosion prevention measures shall be implemented and maintained until erosion has subsided.

- c. Sediment shall be removed from sediment controls once it has reached one-third of the exposed height of the control. Whenever straw bales are used, they shall be staked and dug into the ground 12 centimeters (cm) and only sterile, weed free straw shall be utilized. Catch basins shall be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.
- d. Sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters the stream network or an aquatic resource area. Silt fences or other detention methods shall be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.
- e. The contractor/project applicant is required to inspect and repair/maintain all erosion control practices prior to and after any significant storm event, at 24 hour intervals during extended storm events, and a minimum of every two weeks until all erosion control measures have been completed.

2. Post Construction Erosion Control

- a. Immediately after project completion and before close of seasonal work window, stabilize all exposed soil with mulch, seeding, and/or placement of erosion control blankets. Remove all artificial erosion control devices after the project area has fully stabilized. All exposed soil present in and around the project site shall be stabilized within seven days.
- b. All bare and/or disturbed slopes (> 10 ft. x 10 ft. of bare mineral soil) will be treated with erosion control measures such as hay bales, netting, fiber rolls, native mulch/slash, and hydroseed as permanent erosion control measures.
- c. Where straw, mulch, or slash is used as erosion control on bare mineral soil, the minimum coverage shall be 95 percent with a minimum depth of two inches.
- d. When seeding is used as an erosion control measure, only native seed will be used.
- e. Sterile, weed-free straw, free of exotic weeds, is required when hay bales are used as an erosion control measure.

3. Guidelines for Temporary Stockpiling

- a. Minimize temporary stockpiling of material. Stockpile excavated material in areas where it cannot enter the stream channel. Prior to start of construction, determine if such sites are available at or near the project location. If nearby sites are unavailable, determine location where material will be deposited. Establish locations to deposit spoils well away from watercourses with the potential to deliver sediment into streams supporting, or historically supporting populations of listed salmonids. Spoils shall be contoured to disperse runoff and stabilized with mulch and (native) vegetation. Use devices such as plastic sheeting held down with rocks or

sandbags over stockpiles, silt fences, or berms of hay bales, to minimize movement of exposed or stockpiled soils.

- b. If feasible, conserve topsoil for reuse at project location or use in other areas. End haul spoils away from watercourses as soon as possible to minimize potential sediment delivery.

F. Minimizing Potential for Adverse Effects Due to Scour

1. When needed, utilize instream grade control structures to control channel scour, sediment routing, and headwall cutting.
2. If a pipe or structure that empties into a stream is installed, an energy dissipater shall be installed to reduce bed and bank scour.
3. The toe of rock slope protection shall be placed below bed scour to ensure stability.

H. Measures to Minimize Loss or Disturbance of Riparian Vegetation

Measures to minimize loss or disturbance to riparian vegetation are described below. The revegetation and success criteria that will be adhered to for projects implemented under this Program that result in disturbance to riparian vegetation are also described below.

1. Minimizing Disturbance

- a. Retain as many trees and brush as feasible, emphasizing shade producing and bank stabilizing trees and brush.
- b. Use project designs and access points that minimize riparian disturbance without affecting less stable areas, which may increase the risk of channel instability.
- c. Prior to construction, determine locations and equipment access points that minimize riparian disturbance. Avoid entering unstable areas.
- d. Decompact disturbed soils at project completion as the heavy equipment exits the construction area. At the completion of the project, soil compaction that is not an integral element of the design of a crossing shall be decompacted.
- e. If riparian vegetation is to be removed with chainsaws, consider using saws that operate with vegetable-based bar oil.

2. Revegetation and Success Criteria

- a. Any stream bank area left barren of vegetation as a result of the implementation or maintenance of the restoration practices shall be restored to a natural state by seeding, replanting, or other

agreed upon means (including natural recruitment) with native trees, shrubs, and/or grasses prior to November 15 of the project year. Barren areas shall typically be planted with a combination of willow stakes, native shrubs and trees and/or erosion control grass mixes.

- b. Native plant species shall be used for revegetation of disturbed and compacted areas. The species used shall be specific to the project vicinity or the region of the state where the project is located, and comprised of a diverse community structure (plantings shall include both woody and herbaceous species).

For projects where re-vegetation is implemented to compensate for riparian vegetation impacted by project construction, a re-vegetation monitoring report will be required after five years to document success. Success is defined as 80 percent (%) survival of plantings or 80% ground cover for broadcast planting of seed after a period of three years. If revegetation efforts will be passive (*i.e.*, natural regeneration), success will be defined as total cover of woody and herbaceous material equal to or greater than pre-project conditions. If at the end of three years, the vegetation has not successfully been re-established, the applicant will be responsible for replacement planting, additional watering, weeding, invasive exotic eradication, or any other practice, to achieve these requirements. If success is not achieved within the first five years, the project applicant will need to prepare a follow-up report in an additional five years. This requirement will proceed in five year increments until success is achieved.

APPENDIX B
CRITERIA AIR POLLUTANT AND GREENHOUSE GAS EMISSIONS

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**APPENDIX B
CRITERIA AIR POLLUTANT AND GREENHOUSE GAS EMISSION CALCULATIONS**

I. BACKGROUND INFORMATION AND SUMMARY

Pinole Creek Fish Passage Project		Week Number									Work Days
		1	2	3	4	5	6	7	8	9	
No.	TASK										
1	Site prep (including fish and amphibian relocation)										5
2A	Training wall and sill construction										
2B	Fish passage-way construction										25
3	ESM and RSP installation, including subgrade excavation and ESM mixing										10
4	Site Restoration and Demobilization (incl. access road repaving, seeding, mulching)										5

Pinole Creek Fish Passage Project		Construction Emissions (lbs./workday)			
		ROG	NOx	PM10	PM2.5
No.	Construction TASK				
1	Site prep (including fish and amphibian relocation)	0.2	2.8	0.1	0.1
2	Training wall and sill construction/Fish passage-way construction	0.6	5.4	0.3	0.3
3	ESM and RSP installation, including subgrade excavation and ESM mixing	1.1	12.7	0.5	0.5
4	Site Restoration and Demobilization (incl. access road repaving, seeding, mulching)	0.2	1.5	0.1	0.1
BAAQMD CEQA Significance Criteria		54	54	82	54
Significant Impact?		No	No	No	No

II. ASSUMPTIONS

Phases of Construction

1. Site prep (including fish and amphibian relocation)

Duration:

Equipment Use:

1 Mid-size Excavator (20 hours @ 6 gal/hour)

1 Dump truck (8 hours @ 4 gal/hour)

2. Fish passage-way construction, including training walls and sill

Duration:

Equipment Use:

1 Skid-steer front end loader with jack hammer attachment (AKA Bobcat)
(24 hr @ 1.5 gal/hr)

1 Concrete Saw (18 hr @ 1 gal/hr)

1 Mini excavator (24 hr @ 1.5 gal/hr)

2 4-inch pumps – 9 HP (60 hr @ 1 gal/hr)

1 Dump Truck to haul off concrete and excess soil (40 hr @ 4 gal/hr)

1 Mid-Sized Front end Loader to load Dump Truck (12 hr @ 4.5 gal/hr)

1 Concrete Truck and Concrete Pump Truck or On-Site Mixer
(Assuming Concrete Trucks, 12 hr @ 2 gal/hr)

Truck Trips:

Assume concrete is obtained from Syar Quarry at 885 Lake Herman Road, Vallejo

*)Assume disposal of concrete and soil occurs at West Contra Costa Landfill
(<http://www.co.contra-costa.ca.us/depart/cd/recycle/options/v5126.htm>)*

Quantities:

Concrete: Removal = 85 CY

Concrete: New = 115 CY

Soil from Underneath Concrete: 65 CY

3. ESM and RSP installation, including subgrade excavation and ESM mixing

Duration:

Equipment Use:

1 Mid-Size Excavator (60 hr @ 6 gal/hr)

1 Water Truck (4 hr @ 4 gal/hr)

1 Dump truck (40 hours @ 4 gal/hour)

1 Mid-Sized Front end Loader (~~8-25~~ hr @ 4.5 gal/hr)

2 4-inch pumps – 9 HP (20 hr @ 1 gal/hr)

Truck Trips:

Assume ESM and RSP are obtained from Syar Quarry at 885 Lake Herman Road, Vallejo

Assume disposal of concrete and 80% of soil occurs at West Contra Costa Landfill

(<http://www.co.contra-costa.ca.us/depart/cd/recycle/options/v5126.htm>); assume 20% of soil is mildly contaminated and requires disposal at Keller Canyon Landfill, 901 Bailey Road, Pittsburg

Quantities:

ESM = 350 CY

RSP = 475 CY

Excavated Soil and Riprap for Disposal= 800 CY

4. Site Restoration and Demobilization (including access road repaving, and seeding and mulching)

Duration:

2 days for seeding and mulching

Equipment Use:

1 Dump truck (8 hours @ 4 gal/hour)

1 Paver (8 hr @ 2 gal/hour)

1 Pavement Sweeper (2 hr @ 2 gal/hour)

Operations:

Periodic debris removal, if required (unknown frequency, amount)

Site monitoring -- Personal vehicle trips only; assume

- 8 site visits per year from within Pinole for one to 2 individuals (Friends of Pinole Creek Watershed);
- 4 site visits per year from within Pinole for one to 2 individuals (Flood Control District)
- 4 site visits per year from Oakland (EBMUD fish monitoring);
- 1 site visit per year for Caltrans.

Note: May delete some of these inspection trips -- these later; FCD and Caltrans are already doing inspections and EBMUD is already doing monitoring.

Assume 10 CY/truck for rock/soil

Assume 5 – 6 CY/truck for the concrete mix (18 – 22 trucks).

Trucks will come in via the flood control district access road along the creek, narrow road means that small trucks would be required.

Assume a 5 minute idle time per BMPs

Other Activities:

Phase 1: Assume 4 – 5 trucks for equipment delivery, and no more than 5 trucks to deliver materials such as fencing and sandbags for the coffer dam

Phase 2: Assume all concrete rubble and soil will be removed in 3 days, 1 day per week for 3 weeks (the work will be done in 3 steps), and that concrete would be delivered in 3 steps as well. Unlikely entire pour would be done in one day, so assume 3-4 concrete trucks/day for 6 days.

Phase 3: A total of 163 trips to deliver 825 CY of ESM and RSP combined, and haul off 800 CY total of soil and rip-rap. Soil and rip-rap removal will have to start before ESM/RSP is placed, so assume 5 days to haul off 800 CY, or 16 trucks/day. Assume 5 days at 16 – 17 trucks/day for ESM/RSP delivery.

III. EMFAC2011 Emission Rates

Region Type: County

Region: Contra Costa

Calendar Year: 2015

Season: Annual

Vehicle Classification: EMFAC2007 Categories

EMFAC2011 Idling Emission Rates

Region	CalYr	Season	Veh_Class	Fuel	Mdlyr	Speed	VMT	ROG_RUNEX	TOG_RUNEX	CO_RUNEX	NOX_RUNEX
						(miles/hr)	(miles/day)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)
Contra Costa	2015	Annual	LDT2	DSL	Aggregated	35	290.4	0.0551	0.0627	0.2670	0.5719
Contra Costa	2015	Annual	T7	DSL	Aggregated	35	69476.6	0.2745	0.3125	1.2238	7.3096
Contra Costa	2015	Annual	LDT2	DSL	Aggregated	10	1.9	0.1401	0.1595	0.8935	0.8961

Region	CalYr	Season	Veh_Class	Fuel	Mdlyr	Speed	VMT	CO2_RUNEX	CO2_RUNEX (Pavley I+LCFS)	PM10_RUNEX	PM2_5_RUNEX
						(miles/hr)	(miles/day)	(gms/mile)	(gms/mile)	(gms/mile)	(gms/mile)
Contra Costa	2015	Annual	LDT2	DSL	Aggregated	35	290.4	307.5014	271.3844	0.0441	0.0406
Contra Costa	2015	Annual	T7	DSL	Aggregated	35	69476.6	1782.0492	1737.4980	0.0945	0.0870
Contra Costa	2015	Annual	LDT2	DSL	Aggregated	10	1.9	419.3340	361.4232	0.1123	0.1033

EMFAC2011 Idling Emission Rates

CY	EMFAC2007 Vehicle Category	Fuel_ Type	air_ basin	season	HC (g/hr- veh)	CO (g/hr- veh)	NOX (g/hr- veh)	PM10 (g/hr- veh)	PM2.5 (g/hr- veh)	CO2 (g/hr-veh)	CO2 (with Pavley + LCFS) (g/hr-veh)	TOG (g/hr- veh)	ROG (g/hr- veh)	Sox (g/hr- veh)
2015	HHDT	D	SF	a	5.0453	34.3587	66.2397	0.3050	0.2806	7030.1646	6854.4105	7.2738	6.3894	0.0671

IV. EMISSION ESTIMATES

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Pinole Creek Fish Passage
Pollutant: NOX

1 Site Prep

EQUIPMENT	hp	LoadFac*	NOXFac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	Emfac	Lenq#	DayEms	TotEms
Excavator	163	0.38	4.4827	1	5	work days	4.00	hours/day	1110	5551			1110	5551
Material/Equipment Delivery Truck	1	1	66.2357	1	5	work days	0.3	hours/day	13	66	7.3096	7.3	307	534
Worker Commute				3	5	work days	2	trip/day	0	0	0.5719	12.4	21	306
Tot (grams)									1,123	6,617			128	840
Tot (lbs)									2.6	12.4			0.3	1.4
Tot (lbs/workday)													2.8	13.8

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD 18a 2015
Truck: EMFAC2011 HHDT 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

2 Fish passage-way construction

EQUIPMENT	hp	LoadFac*	NOXFac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	Emfac	Lenq#	DayEms	TotEms
Skid Steer Loader	60	0.37	3.8108	1	25	work days	1.00	hours/day	62	2291			62	2291
Concrete Saw	81	0.73	4.739	1	25	work days	0.72	hours/day	204	9097			204	9097
Excavator	163	0.38	4.4827	1	25	work days	1.00	hours/day	278	6936			278	6936
Pump	84	0.74	4.842	1	25	work days	2.50	hours/day	752	18811			752	18811
Pump	84	0.74	4.842	1	25	work days	2.50	hours/day	752	18811			752	18811
Loader	200	0.36	5.3693	1	25	work days	0.50	hours/day	193	4832			193	4832
Debris Haul Truck	1	1	66.2357	4	6	work days	0.3	hours/day	28	156	7.3096	20.0	585	3508
Worker Commute				4	25	work days	2	trip/day	0	0	0.5719	12.4	28	709
Tot (grams)									2,288	68,840			613	4,218
Tot (lbs)									6.1	126.5			1.4	9.3
Tot (lbs/workday)													8.4	134.8

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD 18a 2015
Truck: EMFAC2011 HHDT 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

3 ESM and RSP installation

EQUIPMENT	hp	LoadFac*	NOXFac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	Emfac	Lenq#	DayEms	TotEms
Excavator	163	0.38	4.4827	1	10	work days	6.00	hours/day	1695	16952			1695	16952
Off-highway Truck (Water)	400	0.38	4.8278	1	10	work days	0.40	hours/day	278	278			278	278
Loader	200	0.36	5.3693	1	10	work days	2.50	hours/day	699	9585			699	9585
Pump	84	0.74	4.842	1	10	work days	2.00	hours/day	602	6020			602	6020
Pump	84	0.74	4.842	1	10	work days	2.00	hours/day	602	6020			602	6020
Material/Equipment Delivery Truck	1	1	66.2357	37	3	work days	0.3	hours/day	113	336	7.3096	7.3	907	2721
Debris Haul Truck	1	1	66.2357	37	3	work days	0.3	hours/day	113	336	7.3096	20.0	2485	12438
Worker Commute				4	10	work days	2	trip/day	0	0	0.5719	12.4	35	355
Tot (grams)									4,338	42,010			3,428	16,502
Tot (lbs)									8.8	92.8			7.8	34.2
Tot (lbs/workday)													17.1	128.8

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD 18a 2015
Truck: EMFAC2011 HHDT 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

4 Site Restoration and Demob

EQUIPMENT	hp	LoadFac*	NOXFac*	Engine Tier	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
										DayEms	TotEms	Emfac	Lenq#	DayEms	TotEms
Paver	84	0.42	8.141		1	5	work days	1.6	hours/day	347	1735			347	1735
Generator	66	0.46	8.8952		1	5	work days	1.6	hours/day	324	1622			324	1622
Worker Commute					3	5	work days	2	trip/day	0	0	0.5719	12.4	21	306
Tot (grams)									671	3,357			21	108	
Tot (lbs)									1.5	7.4			0.0	0.2	
Tot (lbs/workday)													1.6	7.8	

* Equipment: CalEEMod Appendix D
Truck: EMFAC2011 HHDT 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

Grand Total Emissions (grams) #REF!

Pinole Creek Fish Passage
Pollutant: ROG

1 Site Prep

EQUIPMENT	hp	LoadFac*	ROGFac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEmis	TotEmis	Emfac	Length	DayEmis	TotEmis	DayEmis	TotEmis
Excavator	163	0.38	0.3837	1	5	work days	4.00	hours/day	99	475					99	475
Material/Equipment Delivery Truck				1	5	work days	0.1	hours/day	1	8	0.2748	7.3	4	30	5	26
Worker Commute				2	5	work days	2	trips/day	0	0	0.0581	12.4	2	30	2	30
Tot (grams)									99	482			6	30	102	612
Tot (lbs)									0.2	1.1			0.0	0.1	0.2	1.1
Tot (lbs/workday)																0.2

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

2 Fish passage-way construction

EQUIPMENT	hp	LoadFac*	ROGFac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEmis	TotEmis	Emfac	Length	DayEmis	TotEmis	DayEmis	TotEmis
Side Steer Loader	65	0.37	0.2938	1	25	work days	1.00	hours/day	7	177					7	177
Concrete Saw	81	0.73	0.693	1	25	work days	0.72	hours/day	29	727					29	727
Excavator	163	0.38	0.3837	1	25	work days	1.00	hours/day	24	594					24	594
Pump	84	0.74	0.678	1	25	work days	2.50	hours/day	106	2638					106	2638
Pump	84	0.74	0.678	1	25	work days	2.50	hours/day	106	2638					106	2638
Loader	300	0.38	0.4958	1	25	work days	0.50	hours/day	16	385					16	385
Debris Haul Truck	1	1	6.3894	4	5	work days	0.1	hours/day	3	15	0.2748	20.0	23	133	25	147
Worker Commute				4	25	work days	2	trips/day	0	0	0.0581	12.4	2	68	3	68
Tot (grams)									288	7,164			26	200	313	7,364
Tot (lbs)									0.8	15.8			0.1	0.4	0.7	18.2
Tot (lbs/workday)																0.8

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

3 ESM and RSP installation

EQUIPMENT	hp	LoadFac*	ROGFac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEmis	TotEmis	Emfac	Length	DayEmis	TotEmis	DayEmis	TotEmis
Excavator	163	0.38	0.3837	1	10	work days	6.00	hours/day	143	1428					143	1428
Off-highway Truck (Water)	400	0.38	0.3845	1	10	work days	0.40	hours/day	20	234					20	234
Loader	300	0.38	0.4958	1	10	work days	2.50	hours/day	73	730					73	730
Pump	84	0.74	0.678	1	10	work days	2.00	hours/day	84	844					84	844
Pump	84	0.74	0.678	1	10	work days	2.00	hours/day	84	844					84	844
Material/Equipment Delivery Truck	1	1	6.3894	17	3	work days	0.1	hours/day	11	33	0.2748	7.3	34	300	45	335
Debris Haul Truck	1	1	6.3894	17	3	work days	0.1	hours/day	11	54	0.2748	20.0	33	467	304	521
Worker Commute				2	10	work days	2	trips/day	0	0	0.0581	12.4	2	34	3	34
Tot (grams)									430	4,186			131	803	600	4,788
Tot (lbs)									0.9	9.2			0.3	1.3	1.2	10.6
Tot (lbs/workday)																1.1

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

4 Site Restoration and Demob

EQUIPMENT	hp	LoadFac*	ROGFac*	Engine Tier	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
										DayEmis	TotEmis	Emfac	Length	DayEmis	TotEmis	DayEmis	TotEmis
Paver	84	0.42	0.6931		1	5	work days	1.6	hours/day	39	193					39	193
Sweeper	64	0.48	0.8534		1	5	work days	1.6	hours/day	39	198					39	198
Worker Commute					1	5	work days	2	trips/day	0	0	0.0581	12.4	2	30	2	30
Tot (grams)									78	388			2	10	30	388	
Tot (lbs)									0.2	0.9			0.0	0.0	0.2	0.9	
Tot (lbs/workday)																0.2	

* Equipment: CalEEMod Appendix D
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

Pinole Creek Fish Passage
Pollutant: PM10

1 Site Prep

EQUIPMENT	hp	LoadFac*	PM10Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms
Excavator	163	0.38	0.2012	1	5	work days	4.00	hour/day	55	274			55	274
Material/Equipment Delivery Truck	1	1	0.3002	2	5	work days	0.1	hour/day	0	0	0.0945	7.3	7	7
Worker Commute				3	5	work days	2	trip/day	0	0	0.0441	12.4	2	8
Tot (grams)									66	274			3	16
Tot (lbs)									0.1	0.8			0.0	0.1
Tot (lbs/workday)													0.1	0.1

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Ide 2015
Truck: EMFAC2011 HHD1 35 mph
Worker Commute: EMFAC2011 LD12 35 mph

2 Fish passage-way construction

EQUIPMENT	hp	LoadFac*	PM10Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms
Side Steer Loader	65	0.37	0.2002	1	25	work days	1.00	hour/day	5	130			5	132
Concrete Saw	81	0.75	0.372	1	25	work days	0.72	hour/day	16	386			16	396
Excavator	163	0.38	0.2012	1	25	work days	1.00	hour/day	14	340			14	342
Pump	84	0.74	0.364	1	25	work days	2.50	hour/day	57	1414			57	1414
Pump	84	0.74	0.364	1	25	work days	2.50	hour/day	57	1414			57	1414
Loader	200	0.38	0.1833	1	25	work days	0.50	hour/day	7	166			7	162
Debris Haul Truck	1	1	0.3002	4	5	work days	0.1	hour/day	0	1	0.0945	30.0	8	45
Worker Commute				4	25	work days	2	trip/day	0	0	0.0441	12.4	2	52
Tot (grams)									166	3,886			10	100
Tot (lbs)									0.3	8.6			0.0	0.2
Tot (lbs/workday)													0.4	0.3

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Ide 2015
Truck: EMFAC2011 HHD1 35 mph
Worker Commute: EMFAC2011 LD12 35 mph

3 ESM and RSP installation

EQUIPMENT	hp	LoadFac*	PM10Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms
Excavator	163	0.38	0.2012	1	10	work days	6.00	hour/day	82	822			82	822
Off-highway Truck (Water)	400	0.38	0.173	1	10	work days	0.40	hour/day	11	105			11	105
Loader	200	0.38	0.1833	1	10	work days	2.50	hour/day	33	330			33	330
Pump	84	0.74	0.364	1	10	work days	2.00	hour/day	45	453			45	453
Pump	84	0.74	0.364	1	10	work days	2.00	hour/day	45	453			45	453
Material/Equipment Delivery Truck	1	1	0.3002	17	5	work days	0.1	hour/day	1	2	0.0945	7.3	12	35
Debris Haul Truck	1	1	0.3002	17	5	work days	0.1	hour/day	1	3	0.0945	30.0	32	161
Worker Commute				5	10	work days	2	trip/day	0	0	0.0441	12.4	2	27
Tot (grams)									217	2,188			47	223
Tot (lbs)									0.5	4.8			0.1	0.6
Tot (lbs/workday)													0.8	0.6

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Ide 2015
Truck: EMFAC2011 HHD1 35 mph
Worker Commute: EMFAC2011 LD12 35 mph

4 Site Restoration and Demob

EQUIPMENT	hp	LoadFac*	PM10Fac*	Engine Tier	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
										DayEms	TotEms	Emfac	Length	DayEms	TotEms
Paver	84	0.42	0.4794		1	5	work days	1.6	hour/day	27	136			27	135
Sweeper	64	0.48	0.5814		1	5	work days	1.6	hour/day	26	130			26	132
Worker Commute					3	5	work days	2	trip/day	0	0	0.0441	12.4	2	8
Tot (grams)									64	268			2	8	
Tot (lbs)									0.1	0.8			0.0	0.0	
Tot (lbs/workday)													0.1	0.1	

* Equipment: CalEEMod Appendix D
* Haul truck trips
Truck: EMFAC2011 HHD1 35 mph
Worker Commute: EMFAC2011 LD12 35 mph

Pinole Creek Fish Passage
 Pollutant: PM25

1 Site Prep

EQUIPMENT	hp	LoadFac ^a	PM25Fac ^a	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	DayEms	TotEms	DayEms	TotEms
Excavator	163	0.38	0.2038	1	5	work days	4.00	hours/day	50	252			50	252
Materials/Equipment Delivery Truck		1	0.2800	2	2	work days	0.2	hours/day	0	0	0.0870	7.3	1	6
Worker Commute				2	8	work days	2	trips/day	0	0	0.0408	12.4	2	8
Tot (grams)									50	252			50	252
Tot (lbs)									0.1	0.8			0.0	0.0
Tot (lbs/workday)													0.1	0.8

* Equipment: CalEEMod Appendix D
 Truck: EMFAC 2011 HHD IIda 2015
 Truck: EMFAC2011 HHD T 35 mph
 Worker Commute: EMFAC2011 LDT2 35 mph

2 Fish passage-way construction

EQUIPMENT	hp	LoadFac ^a	PM25Fac ^a	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	DayEms	TotEms	DayEms	TotEms
Skid Steer Loader	65	0.37	0.2038	1	25	work days	1.00	hours/day	5	122			5	122
Concrete Saw	81	0.73	0.372	1	25	work days	0.72	hours/day	18	395			18	395
Excavator	163	0.38	0.2038	1	25	work days	1.00	hours/day	13	315			13	315
Pump	84	0.74	0.384	1	25	work days	2.50	hours/day	57	1414			57	1414
Pump	84	0.74	0.384	1	25	work days	2.50	hours/day	57	1414			57	1414
Pump	200	0.38	0.1698	1	25	work days	0.50	hours/day	6	152			6	152
Debris Haul Truck		1	0.2800	8	8	work days	0.1	hours/day	0	1	0.0870	30.6	7	42
Worker Commute				4	28	work days	2	trips/day	0	0	0.0408	12.4	2	8
Tot (grams)									163	3,814			8	162
Tot (lbs)									0.3	8.4			0.0	0.2
Tot (lbs/workday)													0.4	8.8

* Equipment: CalEEMod Appendix D
 Truck: EMFAC 2011 HHD IIda 2015
 Truck: EMFAC2011 HHD T 35 mph
 Worker Commute: EMFAC2011 LDT2 35 mph

3 ESM and RSP installation

EQUIPMENT	hp	LoadFac ^a	PM25Fac ^a	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	DayEms	TotEms	DayEms	TotEms
Excavator	163	0.38	0.2038	1	10	work days	6.00	hours/day	70	795			70	795
Off-highway Truck (Water)	400	0.38	0.1698	1	10	work days	0.40	hours/day	10	97			10	97
Loader	200	0.38	0.1698	1	10	work days	2.50	hours/day	30	320			30	320
Pump	84	0.74	0.384	1	10	work days	2.00	hours/day	48	453			48	453
Pump	84	0.74	0.384	1	10	work days	2.00	hours/day	48	453			48	453
Materials/Equipment Delivery Truck		1	0.2800	27	27	work days	0.1	hours/day	0	1	0.0870	7.3	11	32
Debris Haul Truck		1	0.2800	27	27	work days	0.1	hours/day	0	2	0.0870	30.6	30	168
Worker Commute				5	10	work days	2	trips/day	0	0	0.0408	12.4	2	8
Tot (grams)									207	2,085			43	206
Tot (lbs)									0.6	4.8			0.1	0.6
Tot (lbs/workday)													0.8	6.0

* Equipment: CalEEMod Appendix D
 Truck: EMFAC 2011 HHD IIda 2015
 Truck: EMFAC2011 HHD T 35 mph
 Worker Commute: EMFAC2011 LDT2 35 mph

4 Site Restoration and Demob

EQUIPMENT	hp	LoadFac ^a	PM25Fac ^a	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site		Off-Site		Total	
									DayEms	TotEms	DayEms	TotEms	DayEms	TotEms
Power	84	0.42	0.441	1	2	work days	1.6	hours/day	28	124			28	124
Generator	64	0.48	0.8103	1	2	work days	1.6	hours/day	28	144			28	144
Worker Commute				2	8	work days	2	trips/day	0	0	0.0408	12.4	2	8
Tot (grams)									54	268			2	8
Tot (lbs)									0.1	0.8			0.0	0.0
Tot (lbs/workday)													0.1	0.8

* Equipment: CalEEMod Appendix D
 Truck: EMFAC 2011 HHD IIda 2015
 Truck: EMFAC2011 HHD T 35 mph
 Worker Commute: EMFAC2011 LDT2 35 mph

Pinole Creek Fish Passage
Pollutant: CO2

1 Site Prep

EQUIPMENT	hp	LoadFac*	CO2Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms	DayEms	TotEms
Excavator	163	0.38	911.6999	1	5	work days	4.00	hours/day	126778	633878					126778	633878
Material/Equipment Delivery Truck	1		7030.1646	3	3	work days	0.1	hours/day	1408	7030	1782.0483	7.3	26028	130095	27434	137120
Worker Commute				3	8	work days	2	trip/day	0	0	307.5014	12.4	11439	57195	11439	57195
Tot (grams)									128,182	840,908			37,467	187,285	186,838	828,193
Tot (lbs)									282.6	1412.8			82.8	412.8	386.2	1,826.8

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

2 Fish passage-way construction

EQUIPMENT	hp	LoadFac*	CO2Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms	DayEms	TotEms
Skid Steer Loader	65	0.37	911.6999	1	25	work days	3.00	hours/day	12304	307596					12304	307596
Concrete Saw	81	0.73	999.3	1	25	work days	0.72	hours/day	24186	804854					24186	804854
Excavator	163	0.38	911.6999	1	25	work days	3.00	hours/day	31894	792347					31894	792347
Pump	84	0.74	999.3	1	25	work days	2.50	hours/day	88314	2207846					88314	2207846
Pump	84	0.74	999.3	1	25	work days	2.50	hours/day	88314	2207846					88314	2207846
Loader	200	0.36	906.9127	1	25	work days	0.50	hours/day	18321	458021					18321	458021
Debris Haul Truck	1		7030.1646	4	8	work days	0.1	hours/day	2812	18872	1782.0483	20.0	142564	653384	145076	872256
Worker Commute				4	25	work days	2	trip/day	0	0	307.5014	12.4	15252	381302	15252	381302
Tot (grams)									286,963	6,686,383			167,818	1,238,685	423,788	7,832,078
Tot (lbs)									688.3	14640.6			347.8	2728.4	834.2	17,268.6

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

3 ESM and RSP installation

EQUIPMENT	hp	LoadFac*	CO2Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms	DayEms	TotEms
Excavator	163	0.38	911.6999	1	30	work days	6.00	hours/day	190163	1901633					190163	1901633
Off-highway Truck (Water)	400	0.36	915.8419	1	30	work days	0.40	hours/day	31383	313833					31383	313833
Loader	200	0.36	906.9127	1	30	work days	2.50	hours/day	91804	918043					91804	918043
Pump	84	0.74	999.3	1	30	work days	2.00	hours/day	70651	706511					70651	706511
Pump	84	0.74	999.3	1	30	work days	2.00	hours/day	70651	706511					70651	706511
Material/Equipment Delivery Truck	1		7030.1646	17	3	work days	0.1	hours/day	11951	36954	1782.0483	7.3	221152	663457	233104	693111
Debris Haul Truck	1		7030.1646	17	3	work days	0.1	hours/day	11951	36956	1782.0483	20.0	605897	3029484	617848	3082482
Worker Commute				8	10	work days	2	trip/day	0	0	307.5014	12.4	19065	19065	19065	19065
Tot (grams)									478,356	4,838,938			846,114	3,863,691	1,324,460	8,623,631
Tot (lbs)									1064.6	10228.2			1866.3	8661.8	2918.9	18,791.0

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

4 Site Restoration and Demob

EQUIPMENT	hp	LoadFac*	CO2Fac*	Quantity	DURATION	UNIT	DURATION	UNIT	On-Site			Off-Site			Total	
									DayEms	TotEms	Emfac	Length	DayEms	TotEms	DayEms	TotEms
Paver	84	0.42	909.3787	1	5	work days	1.6	hours/day	28753	143786					28753	143786
Grader	84	0.48	913.6294	1	5	work days	1.6	hours/day	24194	120982					24194	120982
Worker Commute				3	8	work days	2	trip/day	0	0	307.5014	12.4	11439	57195	11439	57195
Tot (grams)									62,847	264,738			11,439	67,196	84,388	321,931
Tot (lbs)									118.7	683.8			26.2	128.1	141.8	708.7

* Equipment: CalEEMod Appendix D
Truck: EMFAC 2011 HHD Idle 2015
Truck: EMFAC2011 HHD 35 mph
Worker Commute: EMFAC2011 LDT2 35 mph

Grand Total Emissions (metric tons) 17.6

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APPENDIX C

SPECIAL STATUS SPECIES (EXCERPTED FROM PACIFIC BIOLOGY 2014)

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APPENDIX C

Special-Status Species

(i) Special-Status Wildlife Species

Special-status wildlife species include those taxa listed or proposed for listing as Threatened or Endangered under the federal or state Endangered Species Acts, state or federal candidates for listing, state Species of Special Concern, state Fully Protected Species, federal Birds of Conservation Concern, and other species included on the California Department of Fish and Wildlife (CDFW) Special Animals List.⁷ These and other special-status wildlife species known from the project region are identified in Table 1, Special-Status Wildlife Species Known from Project Region, along with their regulatory status, habitat requirements, and an evaluation of their potential to occur on or near the project site. For the reasons discussed in Table 1, five special-status wildlife species have potential to occur on or near the project site, including western pond turtle, California red-legged frog, Cooper's hawk, white-tailed kite, and steelhead (Central California Coast). These five species are further discussed below, while the other species included in Table 1 are not further discussed given that they are not expected to occur due to the absence of suitable habitat or other factors.

**Table B-1
Table B-1. Special-Status Wildlife Species Known from Project Region**

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
<i>Mammals</i>				
Pallid bat <i>Antrozous pallidus</i>	--	CSC	Inhabits deserts, grasslands, shrublands, woodlands and forests. Most commonly found in open, dry habitats with rocky areas for roosting. Also known to roost within oak woodlands.	<i>Not Expected:</i> Marginal habitat as the species prefers dry habitats. The project does not include the removal of trees. Additionally, no sign of roosting bats were observed in the culvert during the field survey.

⁷ The CDFW maintains a Special Animals List. "Special Animals" is a general term that refers to all of the taxa the CNDDDB is interested in tracking, regardless of their legal or protection status. The CDFW considers the taxa on this list to be those of greatest conservation need. The most recent list is from 2011.

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
San Pablo vole <i>Microtus californicus</i>	--	CSC	Inhabits saltwater marshes of San Pablo Creek, on the south shore of San Pablo Bay.	<i>t Expected:</i> The project site is located approximately 1.5 miles upstream of San Pablo Bay, is not tidally influenced, and pickleweed or other tidal marsh vegetation does not occur on or near the project site. Given the absence of suitable habitat on or near the project site, San Pablo vole is not expected to occur. BMPs would be implemented to prevent sedimentation and water quality impacts to downstream areas, including tidal marsh habitat near San Pablo Bay.
Salt marsh harvest mouse <i>Reithrodontomys ravioenthris</i>	FE	CE, CFP	Pickleweed and salt marsh stands in tidal and diked coastal salt marshes.	<i>Not Expected:</i> The project site is located approximately 1.5 miles upstream of San Pablo Bay, is not tidally influenced, and pickleweed or other tidal marsh vegetation does not occur on or near the project site. Given the absence of suitable habitat on or near the project site, salt marsh harvest mouse is not expected to occur. BMPs would be implemented to prevent sedimentation and water quality impacts to downstream areas, including tidal marsh habitat near San Pablo Bay.

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
<i>Amphibians and Reptiles</i>				
Western pond turtle <i>Actinemys marmorata</i>	--	CSC	Aquatic habitats including ponds, streams, and irrigation ditches. Requires basking sites such as partially submerged logs, vegetation mats, or open mud banks.	Potentially Present: The species is known to occur in Pinole Creek, approximately 3 miles upstream of the project site, and just outside of the Pinole city limits. ⁸ While the species has not been documented on or within 3 miles of the project site, there are no barriers to dispersal from upstream locations and suitable habitat occurs on and near the project site. Therefore, western pond turtle has potential to occur on the project site.
Alameda whipsnake <i>Masticolphis lateralis euryxanthus</i>	FT	CT	Generally inhabits south facing slopes and ravines where shrubs form a vegetation mosaic with oak trees and grasses.	Not Expected: Suitable habitat is not present on or near the project site given the absence of scrub/chaparral. Additionally, the project site is outside of expected distribution of the species (i.e., species is not known from urban, flatland portions of the Bay Area).

⁸ Muchaey, Bert. EBMUD Fisheries and Wildlife Biologist. Personal communication on November 22, 2013.

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
California red-legged frog <i>Rana draytonii</i>	FT	CSC	In or near permanent or long-lasting sources of water. Breeding adults are often associated with deep (greater than 2 feet) still or slow moving water and dense, shrubby riparian or emergent vegetation.	Potentially Present: The species is known to occur in Pinole Creek, approximately 3 miles upstream of the project site, and just outside of the Pinole city limits. ⁹ While the species has not been documented on or within 3 miles of the project site, there are no barriers to dispersal from upstream locations and suitable habitat occurs on and near the project site. Therefore, California red-legged frog has potential to occur on the project site.
Birds				
Cooper's hawk <i>Accipiter cooperi</i>	--	SA	Inhabits primarily open, interrupted or marginal woodlands. Nests mainly in riparian groves of deciduous trees in canyon bottoms on river flood-plains. Also nests in coast live oak.	Potentially Present: Suitable nesting habitat does not occur on the project site and the project does not require tree removal. However, potential nesting habitat occurs upstream of the project site.
Burrowing owl <i>Athene cunicularia</i>	BCC	CSC	Forages and nests in grasslands and open scrub with small mammal burrows.	Not Expected: Suitable nesting habitat does not occur on the project site. Grassland habitats border the project site to the west, however no potentially suitable small mammal burrows were observed near the project site (i.e., within approximately 600 feet).

⁹ Ibid

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
Northern harrier <i>Circus cyaneus</i>	--	CSC	Inhabits coastal salt and freshwater marshes. Nests and forages in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge. Nests are large mounds of sticks in wet areas.	Not Expected: Suitable nesting habitat is not present on or near the project site given the absence of large, open marsh habitats.
White-tailed kit <i>Elanus leucurus</i>	--	CFP	Usually nests in large bushes or trees, often in an isolated stand, surrounded by open foraging habitat.	Potentially Present: Suitable nesting habitat does not occur on the project site and the project does not require tree removal. However, potential nesting habitat occurs near the project site and open foraging habitat occurs to the west of the project site.
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	BCC	CSC	Fresh and salt water marshes; requires thick continuous cover down to water surface for foraging.	Not Expected: Project site and nearby areas provide very marginal habitat given the scarcity of marsh vegetation.
California black rail <i>Laterallus jamaicensis coturniculus</i>	BCC	CT FP	Salt marshes bordering larger bays; pickleweed typically present.	Not Expected: The project site is located approximately 1.5 miles upstream of San Pablo Bay, is not tidally influenced, and pickleweed or other tidal marsh vegetation does not occur on or near the project site. Given the absence of suitable habitat on or near the project site, California black rail is not expected to occur. BMPs would be implemented to prevent sedimentation and water quality impacts to downstream areas, including tidal marsh habitat near San Pablo Bay.

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
Alameda song sparrow <i>Melospiza melodia pusillua</i>	BCC	CSC	Inhabits salt marshes bordering south arm of San Francisco Bay. Nests low in grindelia spp. (marsh gumplant) bushes and in salicornia spp.	Not Expected: The project site is located approximately 1.5 miles upstream of San Pablo Bay, is not tidally influenced, and marsh gumplant or other tidal marsh vegetation does not occur on or near the project site.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	BCC	CSC	Inhabits salt marshes bordering north side of San Pablo and San Francisco Bay. Nests low in grindelia spp. (marsh gumplant) bushes and in salicornia spp.	Not Expected: The project site is located approximately 1.5 miles upstream of San Pablo Bay, is not tidally influenced, and marsh gumplant or other tidal marsh vegetation does not occur on or near the project site.
California clapper rail <i>Rallus longirostris obsoletus</i>	FE	CE FP	Restricted to salt marshes and tidal sloughs. Usually associated with heavy growth of pickleweed.	Not Expected: The project site is located approximately 1.5 miles upstream of San Pablo Bay, is not tidally influenced, and pickleweed or other tidal marsh vegetation does not occur on or near the project site. Given the absence of suitable habitat on or near the project site, California clapper rail is not expected to occur. BMPs would be implemented to prevent sedimentation and water quality impacts to downstream areas, including tidal marsh habitat near San Pablo Bay.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	--	CSC	Nests in freshwater emergent wetlands with dense vegetation and deep water, often along the borders of lakes and ponds. Typically winters in large, open agricultural areas.	Not Expected: The project area is outside of the nesting range of the species and does not provide typical wintering habitat. Based on the CNDDDB, the species has been observed to the west of the project site, but as stated above, the species does not nest in the area and the individual observed was likely a migrant.

Common and Scientific Name	Status		Habitat Requirements	Historical and Potential Occurrence
	Federal	State		
<i>Fish</i>				
Steelhead Central California Coast <i>Oncorhynchus mykiss</i>	FT	--	Coastal waters, bays and their major tributaries	<i>Potentially Present:</i> Steelhead are known to occur in the lower and upper reaches of Pinole Creek. During February of 2002 (a dry period), several adult steelhead were observed holding and attempting to spawn in the channel downstream of the box culverts. The pool immediately upstream of the culverts provides suitable rearing habitat.

- FE: Federal Endangered
- FT: Federal Threatened
- BCC: Federal Bird of Conservation Concern
- CE: California Endangered
- CSC: California Species of Special Concern
- FP: California Fully Protected
- SA: CDFG Special Animal List (2011)

APPENDIX D
NMFS COMMENTS ON THE
PINOLE CREEK FISH PASSAGE IMPROVEMENT PROJECT 90% DESIGN

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Region
777 Sonoma Avenue, Room 325
Santa Rosa, California 95404

February 7, 2014

MEMORANDUM FOR: Joel Casagrande (NMFS)

CC: Richard Wantuck, Steve Thomas (NMFS)

FROM: David White (NMFS)

SUBJECT: Comments on Pinole Creek Fish Passage Improvement Project
90% Design Drawings.

SUMMARY

According to the Draft Basis of Design Report (M. Love, Dec 27, 2013) and 90% design drawings provided, the proposed culvert retrofit project will significantly improve passage conditions for adult and juvenile steelhead. Because this is an existing culvert retrofit, NMFS' Hydraulic Design Method criteria are the goal for improvement, and they are not necessarily the required design threshold. That said, the proposed project nearly meets all criteria for adult steelhead throughout its length. Velocities, depths and turbulence will be greatly improved from existing conditions. Where the criteria are not met, the lengths are short and the velocities and depths are well within the swimming abilities of steelhead, and fish passage should not be significantly impeded. NMFS Engineering would like to be notified when construction starts.

INTRODUCTION

NMFS appreciates the opportunity to provide comments in response to the Pinole Creek Fish Passage Improvement Project 90% Design Submittal, dated Dec 2013. Pinole Creek is in Contra Costa County and is a tributary to San Pablo Bay. The drawings address a single downstream barrier associated with the Interstate 80 culvert crossing, which is considered a near total barrier for both juvenile and adult steelhead. The crossing is 1.5 miles above San Pablo Bay, and is the only barrier preventing steelhead from reaching 6.8 miles of high quality spawning and rearing habitat upstream. The primary goals of this project are to satisfy adult steelhead passage and avoid increasing flooding on adjacent properties.



EXISTING CONDITIONS

The existing crossing includes a 320 foot long double bay box culvert that is a depth and velocity barrier at fish migration flows. Each bay is 12 feet wide by 10 feet tall. Concrete aprons at the inlet and outlet increase the overall length to 393 feet. While the as-built plans from Caltrans show both culverts as having a constant slope of 0.76%, project survey found multiple slopes from nearly flat in the downstream 130 feet to 1.77% upstream. There is a trapezoidal riprap flood control channel downstream that is armored with 36 inch "derrick stones" to provide scour protection for a hydraulic jump as flows discharge from the concrete culvert. Upstream of the culvert is a more natural condition, with entrenched pool-riffle morphology. The existing conditions fail to meet fish passage criteria at all fish passage flows, due primarily to insufficient depth, and to a lesser extent excessive velocities.

PROJECT HYDROLOGY

The project design flows are from 1 cfs to 7.6 cfs for juveniles and from 3 cfs to 96 cfs for adult steelhead. Q10 = 2,410 cfs, Q25 = 3,020 cfs, Q50 = 3,660, and Q100 = 4,080 cfs.

PROPOSED PROJECT

Due to Interstate 80, culvert replacement is not practical. Therefore, a culvert retrofit is proposed. This includes cutting and reforming a fishway notch through the inlet apron and the upper 148 feet of the western culvert bay, including 13 angled baffles within the fishway notch. The fishway notch will have a downstream transitional notch and an upstream baffled notch. The baffled notch will extend from the upstream edge of the inlet apron 89 feet into the left bay, for a total length of 125 feet at 1.44% slope. It will be trapezoidal in cross-section with a bottom width of 2 feet and a top width of 5 feet. The transitional notch will begin at the downstream end of the baffled notch. It will be 59 feet in length, including a 51 foot long horizontal segment and an 8 foot long reverse slope segment. This section will also be trapezoidal in cross-section with a 2 foot bottom width and will not have baffles.

Concrete training walls will be constructed on the inlet and outlet aprons between bays, and a notched sill will be added to the downstream end of the outlet apron to backwater the lower left half of the culvert bay. The project also proposes to construct a 30 foot long rock armored outlet pool and a 60 foot long roughened rock chute downstream of the existing culvert to raise water levels in the outlet pool, improving access into the baffled culvert at fish passage flows.

FISH PASSAGE EVALUATION

Largely because of construction and transportation constraints imposed by Interstate 80, the proposed treatment of this crossing is a culvert retrofit. It is acknowledged that the conditions that cause an existing culvert to impair fish passage may also limit the remedies for fish passage

improvement. In these cases, the Hydraulic Design Method criteria are the goal for improvement, not necessarily the required design threshold.

Given that this is a culvert retrofit, while it does not meet every fish passage criteria throughout the length of the project, the proposed fish passage project will significantly improve fish passage for adult and juvenile salmonids and resident trout. At a few locations that are short in length, depth or velocity criteria are not met. Fish passage will not be significantly impeded at these locations, as they are very short and still within the swimming abilities of salmonids. In general, velocities, depths and turbulence will be greatly improved throughout the length of the project. According to the hydraulic analysis, opportunities for juvenile passage will occur. The proposed conditions will cause no change to the 100-year water surface elevation upstream of the culvert, and only minor changes downstream of the culvert due in part to moving the hydraulic jump upstream to the edge of the outlet apron. Thus, the project is designed to pass the 100-year event without structural damage to the crossing.

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APPENDIX E
MAILING LIST OF IS/MND RECIPIENTS

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Mailing List of IS/MND Recipients, *Surrounding Landowners and Tenants*

Mailing List of IS/MND Recipients, CEQA Responsible Agencies

Notice of Determination

Appendix D

To:
 Office of Planning and Research
 U.S. Mail: _____ Street Address: _____
 P.O. Box 3044 1400 Tenth St., Rm 113
 Sacramento, CA 95812-3044 Sacramento, CA 95814

County Clerk
 County of: Contra Costa
 Address: _____

From:
 Public Agency: Contra Costa Resource Conservation
 Address: 5552 Clayton Road
Concord, CA 94521
 Contact: Ben Wallace
 Phone: 925-672-6522 ext. 106

Lead Agency (if different from above): _____
 Address: _____
 Contact: _____
 Phone: _____

SUBJECT: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

State Clearinghouse Number (if submitted to State Clearinghouse): 2014112025
 Project Title: Pinole Creek Fish Passage Improvement Project Mitigated Negative Declaration
 Project Applicant: Contra Costa Resource Conservation District
 Project Location (include county): City of Pinole, Contra Costa County

Project Description:
 The proposed Pinole Creek Fish Passage Improvement Project is proposed to improve the migration of a special status species, steelhead trout, by reconfiguring the Pinole Creek channel at the Interstate-80 (I-80) culvert. The primary goal of the proposed Project is to provide adult steelhead access to upstream spawning and rearing habitat by enhancing passage conditions at the I-80 Pinole Creek culvert. Improving passage of juvenile salmonids and adult resident rainbow trout is an ancillary objective.

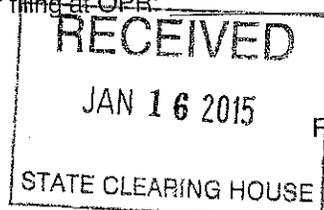
This is to advise that the Contra Costa Resource Conservation District has approved the above
 Lead Agency or Responsible Agency
 described project on January 12, 2015 and has made the following determinations regarding the above
 (date)
 described project.

1. The project [will will not] have a significant effect on the environment.
2. An Environmental Impact Report was prepared for this project pursuant to the provisions of CEQA.
 A Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [were were not] made a condition of the approval of the project.
4. A mitigation reporting or monitoring plan [was was not] adopted for this project.
5. A statement of Overriding Considerations [was was not] adopted for this project.
6. Findings [were were not] made pursuant to the provisions of CEQA.

This is to certify that the final EIR with comments and responses and record of project approval, or the negative Declaration, is available to the General Public at:
<http://www.ccrd.org/>

Signature (Public Agency): *Ben Wallace* Title: Executive Director
 Date: 01-13-2015 Date Received for filing at OPR: _____

Authority cited: Sections 21083, Public Resources Code.
 Reference Section 21000-21174, Public Resources Code.



Revised 2011



State of California—Natural Resources Agency
CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
2015 ENVIRONMENTAL FILING FEE CASH RECEIPT

RECEIPT# 07-2015-
STATE CLEARING HOUSE # (If applicable) 2014112025

SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY

LEAD AGENCY Contra Costa Resource Conservation		DATE 01/16/2015	
COUNTY/STATE AGENCY OF FILING Contra Costa		DOCUMENT NUMBER	
PROJECT TITLE Pinole Creek Fish Passage Improvement Project			
PROJECT APPLICANT NAME Ben Wallace		PHONE NUMBER (925) 672-6522 x106	
PROJECT APPLICANT ADDRESS 5552 Clayton Road	CITY Concord	STATE CA	ZIP CODE 94521

PROJECT APPLICANT (Check appropriate box):

Local Public Agency
 School District
 Other Special District
 State Agency
 Private Entity

CHECK APPLICABLE FEES:

<input type="checkbox"/> Environmental Impact Report (EIR)	\$3,069.75	\$	0.00
<input checked="" type="checkbox"/> Mitigated/Negative Declaration (MND)(ND)	\$2,210.00	\$	2,210.00
<input type="checkbox"/> Application Fee Water Diversion (State Water Resources Control Board only)	\$850.00	\$	0.00
<input type="checkbox"/> Projects Subject to Certified Regulatory Programs (CRP)	\$1,043.75	\$	0.00
<input type="checkbox"/> County Administrative Fee	\$50.00	\$	0.00
<input type="checkbox"/> Project that is exempt from fees			
<input type="checkbox"/> Notice of Exemption (attach)			
<input type="checkbox"/> CDFW No Effect Determination (attach)			
<input type="checkbox"/> Other _____		\$	_____

PAYMENT METHOD:

Cash
 Credit
 Check
 Other _____

TOTAL RECEIVED \$ 2,210.00

SIGNATURE 	PRINTED NAME AND TITLE Christine Rodriguez, SCH Manager
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