County of San Mateo

ROUTINE MAINTENANCE PROGRAM
Draft Environmental Impact Report

Horizon WATER and ENVIRONMENT

February 2020

County of San Mateo

Routine Maintenance Program

Draft Environmental Impact Report

Prepared for:

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February 2020

Horizon Water and Environment. 2020.
Routine Maintenance Program Draft Environmental Impact Report. February. (HWE 18.044) Oakland, CA.

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ACRONYMS AND ABBREVIATIONS

A

AAQS	ambient air quality standards
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ALUCP	Airport Land Use Compatibility Plan
APE	Area of Potential Effects
ASBS	Area of Special Biological Significance
AT&T	American Telephone and Telegraph Company
ATCM	Airborne Toxic Control Measure
Ave	Avenue

B

B	beneficial
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Bay	San Francisco Bay
Bay Area CAP	Bay Area Clean Air Plan
Bay Plan	San Francisco Bay Plan
Bayside	County areas draining to San Francisco Bay
BCDC	Bay Conservation and Development Commission
Blvd	Boulevard
BMP	best management practice
BP	before present

C

C/CAG	City/County Association of Governments of San Mateo County
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CCC	Central California Coast
CalARP	California Accidental Release Prevention
CAL EMA	California Emergency Management Agency
Cal EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CAG	County Agricultural Commissioner
Cal-IPC	California Invasive Plant Council
Cal/OSHA	California Occupational Safety and Health Administration
CalRecycle	California Department of Resources Recycling and Recovery

Caltrain	a commuter railroad operating between San Francisco and San Jose
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CBC	California Building Code
CCAA	California Clean Air Act
CCG	California Geological Survey
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife (since 2012)
CDOC	California Department of Conservation
CDPR	California Department of Pesticide Regulation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (Superfund Act)
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historic Resources Information System
CIP	Capital Improvement Project
CIWMP	countywide integrated waste management plans
CMP	congestion management plan
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CO	carbon monoxide
Coastal Act	California Coastal Act of 1976
Coastside	County areas draining to the Pacific Ocean
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
County	San Mateo County County
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships System
CWPP	Community Wildfire Protection Plans

D

dB	decibels
dBA	A-weighted decibels
dbh	diameter at breast height
DDT	Dichlorodiphenyltri chloroethane
DEIR	draft environmental impact report
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
DPW	Department of Public Works
DWR	California Department of Water Resources

E

EIA	U.S. Energy Information Administration
EIR	environmental impact report
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESL	environmental screening levels
EO	Executive Order
EOP	Emergency Operations Plan

F

F&G Code	California Fish and Game Code
FAA	Federal Aviation Administration
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FHWA	Federal Highway Administration
FMP	fishery management plans
FONSI	Finding of No Significant Impact
FTA	Federal Transportation Agency

G

GHG	greenhouse gas
GI	green infrastructure
gpm	gallons per minute
GPS	Global Positioning System
GWP	global warming potential

H

H_2O	atmospheric water
H_2S	hydrogen sulfide

HAZMAT	hazardous materials
HCP	Habitat Conservation Plan
HDPE	high-density polyethylene
HFCs	hydrofluorocarbons
HMMP	Habitat Mitigation and Monitoring Plan
HMP	multi-hazard mitigation plan
HUC	Hydrologic Unit Code
Hz	Hertz

I

I-	Interstate
ICBO	International Conference of Building Officials
IEPR	Integrated Energy Policy Report
in/sec	inches per second
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management

L

LCP	Local Coastal Program
L_{dn}	24-hour day and night A-weighed noise exposure level
L_{eq}	equivalent sound level
LID	low impact development
L_{max}	maximum noise level
L_{min}	minimum noise level
Ln	Lane
LTS	Less than Significant
LWD	large woody debris

M

Manual	San Mateo County Routine Maintenance Program Manual
MBTA	Migratory Bird Treaty Act
mg/L	milligrams per liter
mg/m^3	milligrams per cubic meter
MLD	Most Likely Descendant
MMI	Modified Mercalli Intensity Scale
MMT CO_2e	million metric tons of carbon dioxide equivalents
MRZ	Mineral Resources Zone
MT	metric tons
MTC	Metropolitan Transportation Commission

N

N/A	not applicable

NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NI	No Impact
NMFS	National Marine Fisheries Service
N_2O	nitrous oxide
NO2	nitrogen dioxid
NOA	naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPW	Notice of Proposed Work
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NTU	Nephelometric Turbidity Units
NWIC	Northwest Information System

O

O_3	ozone
OBD	on-board diagnostic systems
OEHHA	Office of Environmental Health Hazard Assessment
OHP	California Office of Historic Preservation
OSHA	Occupational Safety and Health Administration

P

PAC	powdered activated carbon
PAD/CD	Planned Agricultural District/Coastal Development District
Pb	lead
PBO	Programmatic Biological Opinion
PCBs	polychlorinated biphenyls
PCE	Peninsula Clean Energy
PDU	project development unit
PERP	Portable Equipment Registration Program
PFCs	perfluorocarbons
PFMC	Pacific Fisheries Management Council
PG&E	Pacific Gas and Electric Company
PM	particulate matter

PM2.5	fine particles that are smaller than 2.5 micrometers in diameter
PM10	particles that are smaller than 10 micrometers in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
ppb	parts per billion
PPE	personal protective equipment
ppm	parts per million
PPV	peak particle velocity
PRC	California Public Resources Code
proposed program	San Mateo County Routine Maintenance Program
PS	Potentially Significant
PST	Pacific Standard Time
PVC	polyvinyl chloride

R

RCD	Resource Conservation District
RCP	reinforced concrete pipe
RCPS	Regional Climate Protection Strategy
RCRA	Resource Conservation and Recovery Act
Rd	Road
RGP	Regional General Permit
RM	Resource Management District
RMP	[NEED DEFINITION] Or is this the"proposed program"?
ROG	reactive organic gases
RPS	California's renewable portfolio standard
RSP	rock slope protection
RTIP	Regional Transportation Improvement Program
RWQCB	Regional Water Quality Control Board

S

SAR	IPCC's Second Assessment Report
SB	Senate Bill
SF_6	sulfur hexa-fluoride
SFBAAB	San Francisco Bay Area Air Basin
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SMP	smoke management plan
SO_2	sulfur dioxide
SOD	Sudden Oak Death
SOx	sulfur oxides
SR	State Route
SWRCB	State Water Resources Control Board

T

TACs	toxic air contaminants
TCDD	2,3,7,8-Tetrachlorodibenzodioxin
TCO	traditional cultural properties
TCR	tribal cultural resource
TCP	tribal cultural properties
TMDL	total maximum daily load
TPZ	tree protection zone

U

UBC	Uniform Building Code
U.S. 101	U.S. Highway 101
USA North	Underground Service Alert – Northern California
USACE	U.S. Army Corps of Engineers
USA North	Underground Service Alert – Northern California
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

V

VdB	vibration velocity in decibels
VMT	vehicle miles traveled
VOC	volatile organic compound

W

WDRs	Waste Discharge Requirements

Symbols

°C	degrees Celsius
°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter

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Executive Summary

ES.1 INTRODUCTION

The County of San Mateo (County) has developed the County of San Mateo Routine Maintenance Program (proposed program) as a long-term and ongoing program to ensure that County facilities maintained by Department of Public Works (DPW) and Parks Department are properly functioning and operational.

This Draft Environmental Impact Report (DEIR) evaluates the potential environmental effects of County's proposed program with the intention to provide the public, relevant public agencies, and stakeholders information about the proposed program and its potential environmental effects. For the purposes of compliance with the California Environmental Quality Act (CEQA), this document evaluates the County of San Mateo Routine Maintenance Program or "proposed program" as the proposed project under CEQA (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.).

ES.2 PROGRAM OVERVIEW

The proposed program has been prepared to provide a more comprehensive and consistent approach to conducting maintenance activities. The proposed program (including the County of San Mateo Routine Maintenance Program Manual (Manual) [**Appendix A**] and this CEQA document) is intended to cover the 10-year planning period from 2020 through 2030. The Manual and DEIR are meant to be read as companion volumes. The DEIR references or summarizes information (including figures and tables) presented in the Manual to avoid repeating information. The reader is encouraged to review the Manual, included in this document as Appendix A, while reviewing the DEIR.

ES.2.1 PROGRAM BACKGROUND

The DPW and Parks Department are both responsible for conducting routine maintenance activities at County facilities. DPW is responsible for maintaining over 300 miles or roadway and associated facilities including roadway shoulder areas, roadside ditches, ditch relief culverts, bridges, green infrastructure (GI)-based stormwater facilities, and flood control facilities in active flood control zones. DPW is also responsible for conducting vegetation management at two small municipal airports including the Half Moon Bay Airport and San Carlos Airport, and closed landfills including the Pescadero Landfill and Half Moon Bay Landfill. The Parks Department is responsible for maintaining various County park and recreational facilities, including trails and campgrounds.

To date, the County has developed, permitted, and conducted maintenance activities as discrete actions. The purpose of the proposed program is to provide a more comprehensive and consistent approach to conducting routine maintenance activities. In doing so, the County

will follow a consistent set of maintenance methods, Best Management Practices (BMPs), and impact avoidance approaches. The proposed program will also facilitates using longer-term regulatory permits from authorizing agencies. The Manual includes descriptions of County facilities, natural resources at County facilities in the program area, and programmatic guidance to avoid and minimize potential environmental impacts when conducting routine maintenance work.

ES.3 PROGRAM OBJECTIVES

The objectives of the proposed program include:

- Maintain the functional integrity and operational quality and capacity of County channels, stormwater facilities, roads, trails, and other recreational facilities.
- Prevent roadway flooding, reduce safety hazards, and minimize potential threats to the structural integrity of roadways, bridges, and stormwater and channel facilities within unincorporated San Mateo County.
- Repair and stabilize eroding streambanks and failing culverts in a timely manner to prevent larger-scale slope failures, avoid emergencies, and minimize sedimentation to downstream water bodies.
- Maintain County facilities and vegetation conditions for public safety purposes including, maintaining visibility, reducing fire risk, and reducing the potential for unauthorized encampments.
- Avoid and minimize potential impacts to the natural environment when conducting routine maintenance activities by incorporating detailed appraisals of habitat, species, and resource conditions while identifying and prioritizing maintenance needs and developing site-specific maintenance plans.
- Protect and enhance the natural environment at County facilities.
- Provide regulatory assurance to enable long-term permits with fewer delays and improved work planning and implementation.
- Develop mitigation approaches in a more strategic and integrative manner that targets areas in the County that could benefit from habitat enhancement, restoration, and/or preservation.

ES.3.1 PROGRAM AREA

The program area is located within San Mateo County, California (**Figure ES-1**). The program area consists of two physiographic regions: (1) County areas draining to San Francisco Bay (Bayside); and (2) County areas draining to the Pacific Ocean (Coastside). The County is divided by the Santa Cruz Mountains and these physiographic regions reflect the principal drainage patterns and directions. Within these two regions, routine maintenance areas in the County are further located according to County maintained roads, trails, parks, and channels and stream courses.

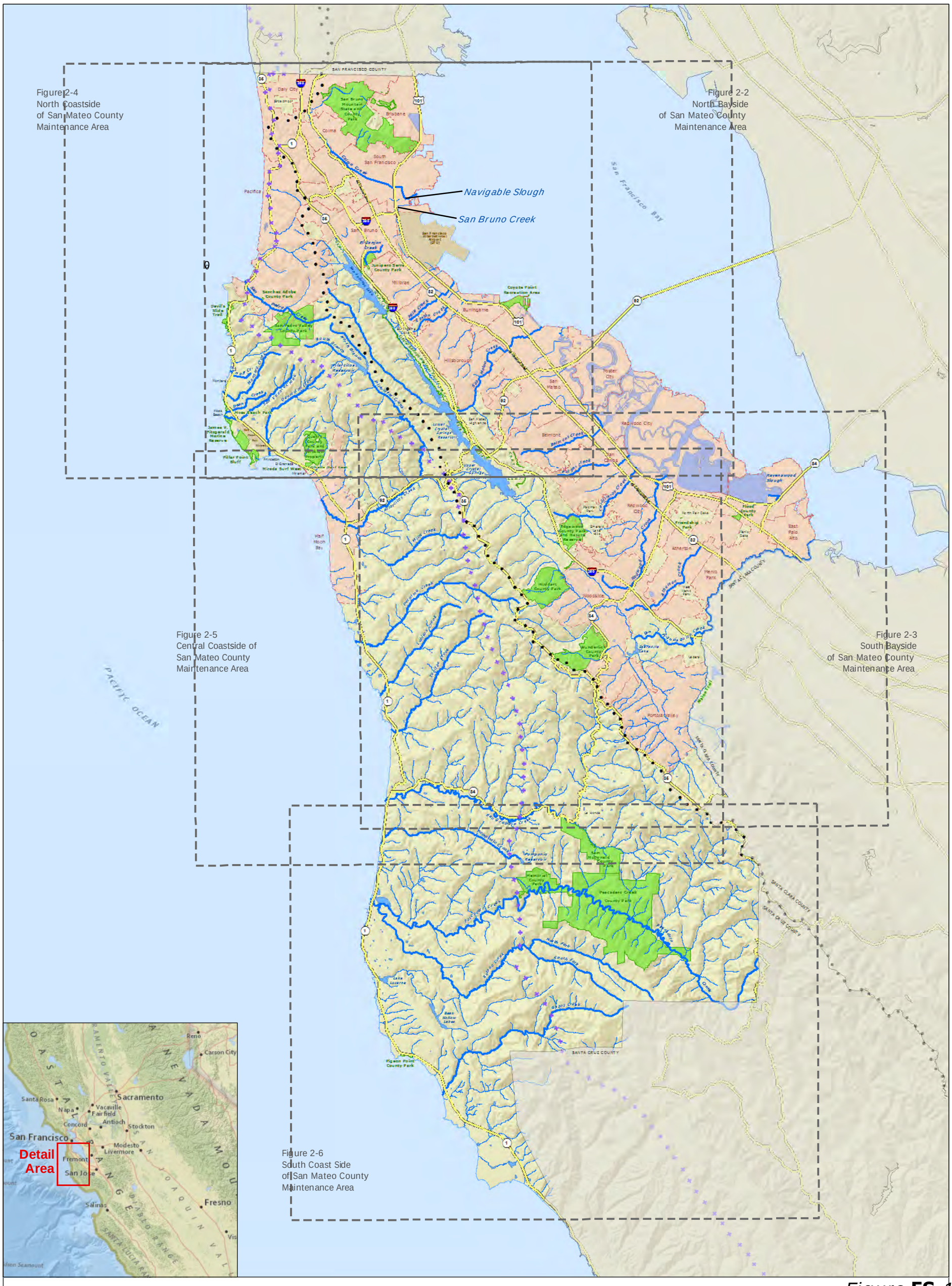

Figure **ES-1**

San Mateo County Maintenance Area

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The proposed program addresses routine maintenance activities countywide. While the maintenance locations presented in the Manual (Tables B-1 and B-2 and Figures B-1 through B-7 in Appendix A) represent anticipated maintenance locations, not every site could be determined at the time of developing the Manual. The proposed program includes maintenance activities countywide that are consistent with those described in Chapter 2, *Project Description.*

ES.4 PROGRAM DESCRIPTION

ES.4.1 MAINTENANCE ACTIVITIES

Proposed program activities would include the following general types of activities:

- Culvert repair and replacement
- Channel maintenance including concrete repair, repair of existing rock slope protection, tide gate maintenance, and floodwall and levee maintenance;
- Bridge maintenance including erosion protection improvements at bridge abutments, repairing guard railings and decking on bridges, patching up cracks, and reapplying paint;
- Roadside ditch maintenance including vegetation, sediment and debris removal;
- Green infrastructure maintenance including storm drain trash removal, weed removal, and light sediment clearing, and replanting vegetation;
- Sediment removal in engineered channels, natural creeks, ditch relief culverts, and on-channel culverts at road crossings;
- Creek bank stabilization;
- Vegetation management including mowing, trimming and pruning, tree removal, herbicide application, grazing, and management of downed trees;
- Road maintenance including repaving, replenishing gravel, repairing rolling dips, and slip-out/slide repairs along County roads;
- Trail maintenance including re-grading, repairing water bars, rolling dips, and drainage ditches; and
- Maintenance at Coyote Point Marina and in-kind repair or replacement of existing rock slope protection along portions of the County coastline.

For a detailed description of maintenance activities proposed at County facilities, see Section 2.4 in Chapter 2, *Project Description.*

ES.4.2 PROGRAM IMPLEMENTATION

Proposed maintenance activities would be conducted on an annual cycle; the timing for implementing activities would vary depending on whether they are non-ground disturbing activities, or ground disturbing activities. Maintenance timing would also depend on site location.

Non-ground-disturbing maintenance activities that would be conducted in upland areas such as mowing, grazing, and vegetation trimming along County roads, trails, and around County Parks Department facilities generally occur between spring and summer months. Limited herbicide application in upland areas occur at various times of the year and depend on the targeted invasive plant. Other minor maintenance activities such as removing trash and debris from culverts, minor bridge and trail maintenance in upland areas may occur year-round. For vegetation management and fire reduction activities, typically a reconnaissance evaluation would be conducted annually in the winter months. Vegetation thinning and removal of dead branches or understory are best conducted in spring, once the primary wet months are over and before the drier conditions in the summer, when the maintenance activities themselves can be a source of ignition.

Non-ground disturbing maintenance activities that would be conducted in uplands or along roads may occur year-round, although the emphasis of maintenance is in the spring season. For these activities, including maintenance along access roads, and fire fuel reduction, and tree pruning and brush clearing, a reconnaissance-level evaluation would typically be conducted annually in the winter months. Non-ground disturbing upland vegetation management is generally scheduled to occur during the spring months when the fire risk is low. These activities would begin in April and be completed by June 30th (refer to Figure 7-1 in Appendix A for a detailed overview of the maintenance timelines).

For maintenance activities that involve ground disturbance near wetlands or other jurisdictional waters, the County would conduct a maintenance evaluation at each facility during January and February, and then prioritize maintenance activities for the annual work plan while taking into consideration the history of past maintenance activities and specific resource conditions at individual facilities. During February to March, an annual maintenance work plan would be developed for ground-disturbing activities based on the assessment and prioritization process. Ground disturbing maintenance work would be implemented between June 15 and October 15.

The annual maintenance work plan for ground-disturbing activities would identify specific treatment approaches, conceptual plans and/or design plans for each treatment that would be implemented, description of construction equipment to be used, access and staging information, and a summary of impacts to waters of the U.S. and waters of the state. In addition, the work plan will identify the specific tiering category for each maintenance project according to the impact tiers, which are based on biological conditions and potential for the activity to adversely affect sensitive species (see Section 2.6.1 in Chapter 2 for additional detail). Following the identification of the appropriate tiering category for each maintenance project, activity-specific best management practices (BMPs) would be applied and the maintenance work would be conducted accordingly. Refer to Tables 2-3 through 2-5 in Chapter 2 for an overview of BMPs that would be implemented.

ES.5 PUBLIC INVOLVEMENT PROCESS

ES.5.1 SCOPING COMMENT PERIOD

The scoping period for the proposed program was initiated on January 7, 2019 with circulation of the Notice of Preparation (NOP). The NOP presented background information on the proposed program and the environmental review process, and invited the public to

provide comments during the scoping period. Copies of the NOP were mailed to all landowners with properties adjacent to the maintenance sites. Notices were also published in local newspapers. A scoping meeting was held during the scoping period at 455 County Center, Room 101, Redwood City, CA. Written comments were received throughout the scoping period. The scoping period closed on February 5, 2019. Please see Chapter 1, *Introduction*, for a detailed description of the scoping comment period and scoping meetings.

ES.5.2 DEIR PUBLIC COMMENT PERIOD

This DEIR is being circulated for a 45-day public review and comment period. During this period, the County will host one public meeting at 455 County Center, Room 101, Redwood City, California. Written comments will be accepted by mail or email (preferably via email in Microsoft Word or PDF format) during this period. Please direct your written comments to the name and address listed below.

Krzysztof Lisaj
555 County Center, 5th Floor
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The DEIR is available for review at the County's website:

publicworks.smcgov.org/our-projects

ES.5.3 PREPARATION OF FEIR AND CERTIFICATION

Following the close of the DEIR public comment period, a Final Environmental Impact Report (FEIR) will be prepared with responses to comments on the DEIR and revisions to the DEIR based on the comments received. The FEIR will also include a list of all the individuals, organizations, and agencies that provided comments on the draft document, and will contain copies of all the comments received the public comment period. The FEIR will serve as the basis for approving or denying the proposed program.

ES.6 AREAS OF KNOWN CONTROVERSY AND ISSUES TO BE RESOLVED

State CEQA Guidelines Section 15123(b) requires that an Executive Summary identify "areas of controversy known to a lead agency including issues raised by agencies and the public." There are no major areas of known controversy related to the proposed program or this DEIR. To date, while not considered controversial, the following questions or concerns have been raised regarding the proposed program during the scoping period:

- Recommends greater efforts in removing dead and hazardous trees.
- Prohibit use of herbicides near habitats and waterways that drain to the Pacific Ocean.
- Monitoring of coastal bluff erosion and related public safety hazards near coastal bluffs.

ES.7 SIGNIFICANT IMPACTS

This section presents the significant impacts that were identified in the DEIR. This is not a comprehensive discussion of impacts of the proposed program; the reader is directed to **Table ES-1**, at the end of this chapter for additional information. No significant and unavoidable impacts would occur under the proposed program.

The following impacts were found to be less than significant with mitigation:

- Impact AQ-4: Result in Other Emissions Such as Odors Adversely Affecting a Substantial Number of People (Section 3.3)
- Impact BIO-1: Potential Adverse Effects on Special-Status Plant or Animal Species (Section 3.4, *Biological Resources*)
- Impact BIO-2: Potential Adverse Effects on Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations or by CDFW, USFWS, or NMFS (Section 3.4)
- Impact BIO-3: Potential Adverse Effects on Federally or State Protected Wetlands as Defined by Section 404 of the Clean Water Act (Section 3.4)
- Impact BIO-4: Potential Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites (Section 3.4)
- Impact BIO-6: Be Located inside or within 200 Feet of a Marine or Wildlife Reserve (Section 3.4)
- Impact HAZ-1: Create a Significant Hazard to the Public or the Environment from the Routine Transport, Use, or Disposal of Hazardous Materials (Section 3.8, *Hazards and Hazardous Materials*)
- Impact HAZ-4: Result in a Significant Hazard to the Public or the Environment from Location on a Known Hazardous Materials Site (Section 3.8)
- Impact NOI-1: Substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed maintenance areas in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state or federal standards (Section 3.11, *Noise*)
- Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels (Section 3.11)
- Impact NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan area, or, within 2 miles of a public airport or public-use airport, expose people residing or working in the project site to excessive noise levels (Section 3.11)
- Cumulative Impact BIO-1: Cumulative Effects on Biological Resources

ES.8 ALTERNATIVES CONSIDERED

The purpose of the alternatives analysis in an EIR is to describe a range of reasonable alternatives to the proposed program that could feasibly attain most of the objectives of the

proposed program while reducing or eliminating one or more of the proposed program's significant effects. The range of alternatives considered must include those that offer substantial environmental advantages over the proposed program and may be feasibly accomplished in a successful manner considering economic, environmental, social, technological, and legal factors.

The following alternatives have been evaluated for their feasibility and their ability to achieve most of the proposed program objectives while avoiding, reducing, or minimizing significant impacts identified for the proposed program:

- Alternative 1: No Project Alternative
- Alternative 2: Reduced Maintenance Alternative
- Alternative 3: No Herbicide Use Alternative
- Alternative 4: No Tier 3 Maintenance Activities Alternative

ES.8.1 ALTERNATIVE 1 - NO PROJECT ALTERNATIVE

Under this alternative, the County would not implement a comprehensive Routine Maintenance Program to guide and direct maintenance activities for County roads, trails, parks, culverts, bridges, GI, and storm drainage facilities under the County's maintenance authority. Rather, similar to existing conditions, maintenance activities would be implemented on a project-by-project, as-needed basis. It would not meet several program objectives such as repairing or stabilizing eroded streambanks and culvert failures in a timely manner, providing regulatory assurance to enable long-term permits with fewer delays, or developing mitigation approaches in a more strategic and integrative manner.

Construction-related impacts (e.g., emissions, noise, vehicle traffic, biological and cultural resources effects) associated with the No Project Alternative would be substantially less severe than the proposed program. This alternative would, however, not benefit from an assessment of annual maintenance needs and integrated approach that addresses the County's overall maintenance needs before issues become larger and more complicated. The County would need to apply for permits for many of the proposed program activities on an annual basis, which would likely result in delays. As a result of such delays, additional environmental impacts would likely occur such as increased flooding from not clearing sediment from culverts and greater erosion and/or water quality impacts due to not addressing bank failures and road slip-outs/slides in a timely fashion.

ES.8.2 ALTERNATIVE 2 - REDUCED MAINTENANCE ALTERNATIVE

Alternative 2 (Reduced Maintenance Alternative) is similar to the proposed program but would reduce the number of culvert replacement projects, bank stabilization/slip-out repairs, bridge maintenance, and sediment removal projects.

This alternative would reduce construction impacts associated with the proposed program including traffic delays, air emissions from operating construction equipment and haul truck trips, and construction noise. However, reducing the extent of maintenance projects completed on an annual basis could result in a greater need for other maintenance projects that get deferred to a later time. Deferring such maintenance projects could also result in the

need for emergency projects that tend to be addressed without adequate planning and occur during the wrong time of year (e.g., rainy season) when there is a greater likelihood for more severe construction-related impacts to occur on biological resources and water quality. Environmental conditions at sites requiring bank stabilization or slip-out/slide repair, culvert replacement, sediment removal, or bridge maintenance that get deferred to a later time may worsen over time and become larger projects, potentially resulting in increased environmental impacts relative to the proposed program.

ES.8.3 ALTERNATIVE 3 – NO HERBICIDE USE ALTERNATIVE

Alternative 3 would be similar to the proposed program except that no herbicides would be used for vegetation management. Although herbicides are used in limited locations to control invasive plants on County-owned parcels, other vegetation management methods including hand removal, grazing, and mechanized equipment would be used instead of herbicides.

This alternative would avoid potential water quality effects including accidental spills, chemical, and other risks associated with herbicide use. However, certain types of vegetation may be even more difficult to control without herbicides, resulting in persistent degraded habitat conditions. Because hand removal and mechanized vegetation removal techniques may not be as effective as herbicides, this alternative may also require the County to remove certain invasive plants on a more frequent basis, resulting in greater number of truck trips and pollutant emissions due to higher use of mechanized equipment.

ES.8.4 ALTERNATIVE 4 – NO TIER 3 MAINTENANCE ACTIVITIES ALTERNATIVE

Under Alternative 4, the County would only conduct maintenance activities with a Tier 1(No Impact) and Tier 2 (Low Impact) designation, as described in Chapter 2, *Project Description.* Tier 3 (Moderate/High Impact) maintenance activities would not be conducted under this alternative. In doing so, this alternative would result in substantially less severe biological resources effects, particularly federally or state listed species and habitat supporting these species. This alternative would also result in less air pollutant emissions, construction truck trips, and noise compared to the proposed program since less maintenance projects would be implemented in a given year.

Like Alternative 2, this alternative would require the County to pursue separate permits for Tier 3 activities outside of the Routine Maintenance Program and in doing so, environmental conditions at Tier 3 sites may worsen due to permitting delays. Tier 3 maintenance projects may become larger projects over time and could potentially result in increased environmental impacts.

ES.9 SUMMARY OF IMPACTS AND LEVELS OF SIGNIFICANCE

The impacts of the proposed program, proposed mitigation, and significance conclusions are discussed in detail in Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures* and Chapter 4, *Other Statutory Considerations* of this DEIR. Table ES-1 summarizes the impacts, mitigation measures, and levels of significance identified in this document.

Table ES-1. Summary of Potential Impacts and Mitigation Measures

Potential Impact		Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
3.2 Aesthetics				
AES-1:	Adverse Effects on Scenic Vistas, Views from Residential Areas, Public Lands, Water Bodies or Roads	LTS	None Required	LTS
AES-2:	Damage to Scenic Resources Viewed from a Scenic Highway Including, but Not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway	LTS	None Required	LTS
AES-3:	Substantial Degradation of the Existing Visual Character of the Site and its Surroundings in Non-Urbanized Areas	LTS	None Required	LTS
AES-4:	Conflict with Applicable Zoning and Other Regulations Governing Scenic Quality in Urbanized Areas	LTS	None Required	LTS
AES-5:	New Sources of Light or Glare	NI	None Required	NI
3.3 Air Quality				
AQ-1:	Conflict with or obstruct implementation of the applicable air quality plans	LTS	None Required	LTS
AQ-2:	Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is in Non-attainment	LTS	None Required	LTS
AQ-3:	Expose Sensitive Receptors to Substantial Pollutant Concentrations	LTS	None Required	LTS
AQ-4:	Result in Other Emissions Such As Odors Adversely Affecting a Substantial Number of People	PS	Mitigation Measure AQ-1: Locate Stockpiles of Odorous Materials at a Distance from Sensitive Receptors	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
AQ-5: Generate pollutants that will violate existing standards of air quality onsite or in the surrounding area	LTS	None Required	LTS
3.4 Biological Resources			
BIO-1: Potential Adverse Effects on Special-Status Plant or Animal Species	PS	Mitigation Measure BIO-1: Provide Compensatory Mitigation for Special Status Plant Species Mitigation Measure BIO-2: Establish Tree Protection Zones for Ground-disturbing Activities Near Butano Ridge Cypress Mitigation Measure BIO-3: Monitor Temporary Impact from Vegetation Management Activities on "Disturbance-Tolerant" Special-Status Plant Species Mitigation Measure BIO-4: Provide Compensatory Mitigation for the California Red-Legged Frog and California Tiger Salamander Mitigation Measure BIO-5: Provide Compensatory Mitigation for the San Francisco Garter Snake Mitigation Measure BIO-6: Pre-Activity Survey and Avoidance Mitigation Measure BIO-7: Provide Alternative Bat Roost Habitat	LTS
BIO-2: Potential Adverse Effects on Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations or by California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), or National Marine Fisheries Service (NMFS)	PS	Mitigation Measure BIO-8: Provide Compensatory Mitigation for Woody Riparian Vegetation	LTS
BIO-3: Potential Adverse Effects on Federally Protected Wetlands as defined by Section 404 of the Clean Water Act	PS	Mitigation Measure BIO-9: Provide Compensatory Mitigation for Impacts on Wetlands and other Waters	LTS

Potential Impact		Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
BIO-4:	Potential Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites	LTS	None Required	LTS
BIO-5:	Conflict with Local Policies or Ordinances Protecting Biological Resources, or an Adopted Habitat Conservation Plan or Natural Community Conservation Plan	LTS	None Required	LTS
BIO-6:	Be Located Inside or Within 200 Feet of a Marine or Wildlife Reserve	PS	Mitigation Measure BIO-8: Provide Compensatory Mitigation for Woody Riparian Vegetation Mitigation Measure BIO-9: Provide Compensatory Mitigation for Impacts on Wetlands and other Waters	LTS
BIO-7:	Result in Loss of Oak Woodlands or Other Non-Timber Trees	LTS	None Required	LTS
4.5 Cultural Resources				
CUL-1:	Adverse Change in Significance of Historical or Archaeological Resources	LTS	None Required	LTS
CUL-2:	Disturbance of Human Remains	LTS	None Required	LTS
4.6 Geology, Soils, and Seismicity				
GEO-1:	Substantial Adverse Effects Resulting from Fault Rupture, Strong Seismic Ground Shaking, Liquefaction, or Coastal Cliff/Bluff Instability or Erosion	B	None Required	B
GEO-2:	Substantial Adverse Effects Resulting from Landslides	B	None Required	B
GEO-3:	Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature	LTS	None Required	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
4.7 Greenhouse Gas Emissions			
GHG-1: Generate Greenhouse Gas (GHG) Emissions	LTS	None Required	LTS
GHG-2: Potential to Conflict with Applicable Plans, Policies, or Regulations Adopted for the Purpose of Reducing the Emissions of GHGs	LTS	None Required	LTS
4.8 Hazards and Hazardous Materials			
HAZ-1: Create a Significant Hazard to the Public or the Environment from the Routine Transport, Use, or Disposal of Hazardous Materials	PS	Mitigation Measure HAZ-1: Proper Handling and Disposal of Contaminated Soil, Sediment, and Groundwater	LTS
HAZ-2: Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset or Accident Conditions Involving the Release of Hazardous Materials	LTS	None Required	LTS
HAZ-3: Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Wastes within 0.25 Mile of an Existing or Proposed School	LTS	None Required	LTS
HAZ-4: Result in a Significant Hazard to the Public or the Environment from Location on a Known Hazardous Materials Site	PS	Mitigation Measure HAZ-2: Review of Proximity to Existing Known Hazardous Materials Clean-up Sites and Implementation of Safety Precautions	LTS
HAZ-5: Result in a Safety Hazard or Excessive Noise for People Residing or Working in the Program Area within the Jurisdiction of an Airport Land Use Plan or within 2 Miles of an Airport or Private Airstrip	LTS	None Required	LTS

Potential Impact		Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
HAZ-6:	Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan	LTS	None Required	LTS
HAZ-7:	Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires	LTS	None Required	LTS
4.9 Hydrology and Water Quality				
HYD-1:	Violate Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Water Quality	LTS	None Required	LTS
HYD-2:	Substantially Alter Existing Drainage Pattern of Site or Area, or Create or Contribute Runoff Water That Exceeds Capacity of Stormwater Systems or Results in Substantial Erosion	LTS	None Required	LTS
HYD-3:	Harm to People or Structures due to Flooding as a Result of Dam Failure or Inundation by Seiche, Tsunami, or Mudflow	LTS	None Required	LTS
4.10 Land Use and Planning				
LU-1:	Division of Existing Communities	LTS	None Required	LTS
LU-2:	Incompatibility with Existing Activities and Land Uses and Inconsistencies with Applicable Land Use Plans or Policies (e.g. General Plans, Local Coastal Program, Land Use Designations and Zoning)	LTS	None Required	LTS
LU-3:	Result in the Congregation of More Than 50 People on a Regular Basis	NI	None Required	NI

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
LU-4: Encourage Off-Site Development of Undeveloped Areas or Increase Development Intensity in Existing Developed Areas	NI	None Required	NI
4.11 Noise			
NOI-1: Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of Proposed Maintenance Areas in excess of Standards Established in the Local General Plan or Noise Ordinance, or in other applicable Local, State or Federal Standards	PS	Mitigation Measure NOI-1: Employ Noise-Reducing Maintenance Practices Mitigation Measure NOI-2: Advance Notification of Nearby Sensitive Receptors Mitigation Measure NOI-3: Limit Nighttime Construction Noise	LTS
NOI-2: Generation of Excessive Groundborne Vibration or Groundborne Noise Levels	PS	Mitigation Measure NOI-4: Implement Vibration Reduction Measures	LTS
NOI-3: Be Located in the Vicinity of a Private Airstrip or an Airport Land Use Plan Area, or, within 2 miles of a Public Airport, and Expose People Residing or Working in the Project Site to Excessive Noise Levels	PS	Mitigation Measure NOI-5: Employee Best Management Practices at Airports	LTS
4.12 Public Services and Utilities			
PSU-1: Effects on Wastewater Treatment Demand and Water Supply	LTS	None Required	LTS
PSU-2: Effects on Public Services, including Police, Fire, and Emergency Response Times	LTS	None Required	LTS
PSU-3: Disruption to Utilities and Service System Facilities, including Storm Drainage, Electric Power, Natural Gas, or Telecommunications Facilities	LTS	None Required	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
PSU-4: Exceedance of Landfill Capacity or Non-Compliance with Regulations Related to Disposal of Excavated Sediment or Debris	LTS	None Required	LTS
4.13 Recreation			
REC-1: Increased Use of Recreational Facilities such that Substantial Deterioration Would Occur	LTS	None Required	LTS
REC-2: Temporary Disruption of the Use, or Access of Recreational Facilities	LTS	None Required	LTS
4.14 Transportation and Traffic			
TRA-1: Conflict with a Program Applicable Plan, ordinance, or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities	LTS	None Required	LTS
TRA-2: Result in Increased Vehicle Miles Traveled	LTS	None Required	LTS
TRA-3: Substantially Increase Hazards due to a Geometric Design Feature or Incompatible Uses	LTS	None Required	LTS
TRA-4: Result in Inadequate Emergency Access	LTS	None Required	LTS
4.15 Tribal Cultural Resources (TCRs)			
TCR-1: Cause a Substantial Adverse Change in the Significance of a TCR, as Defined in Pub. Res. Code Section 21074 or Determined to be Significant by the Lead Agency	LTS	None Required	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
4.16 Wildfire			
WLD-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan	LTS	None Required	LTS
WLD-2: Exacerbate Wildfire Risks, and Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire/Expose People or Structures to Risks (e.g. flooding or landslides)	LTS	None Required	LTS
WLD-3: Require the Installation or Maintenance of Associated Infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that May Exacerbate Fire Risk	LTS	None Required	LTS
Cumulative Impacts			
BIO-1: Cumulative Effects on Biological Resources	PS	Mitigation Measure BIO-1: Provide Compensatory Mitigation for Special Status Plant Species Mitigation Measure BIO-2: Establish Tree Protection Zones for Ground-disturbing Activities Near Butano Ridge Cypress Mitigation Measure BIO-3: Monitor Temporary Impact from Vegetation Management Activities on "Disturbance-Tolerant" Special-Status Plant Species Mitigation Measure BIO-4: Provide Compensatory Mitigation for the California Red-Legged Frog and California Tiger Salamander Mitigation Measure BIO-5: Provide Compensatory Mitigation for the San Francisco Garter Snake Mitigation Measure BIO-6: Pre-Activity Survey and Avoidance	LTS

Potential Impact	Level of Significance before Mitigation[1]	Mitigation Measures	Level of Significance after Mitigation[1]
		Mitigation Measure BIO-7: Provide Alternative Bat Roost Habitat Mitigation Measure BIO-8: Provide Compensatory Mitigation for Woody Riparian Vegetation Mitigation Measure BIO-9: Provide Compensatory Mitigation for Impacts on Wetlands and other Waters	
TRA-1: Disruptions to Traffic Patterns	LTS	None	LTS

KEY: PS = Potentially Significant; SU = Significant and Unavoidable; LTS = Less than Significant; NI = No Impact; B = Beneficial

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Chapter 1
Introduction

The County of San Mateo (County) has prepared this Draft Environmental Impact Report (DEIR) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the County's proposed Routine Maintenance Program (proposed program). This DEIR was prepared in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and CEQA Guidelines (Cal. Code Regs., tit. 14, Section 15000 *et seq.*).

1.1 COUNTY OF SAN MATEO

The County of San Mateo Department of Public Works (DPW) and Parks Department are both responsible for conducting routine maintenance activities to ensure that County facilities are properly functioning and operational. For the purposes of this draft environmental impact report (DEIR), these two departments will be referred to collectively as "the County" or "the Departments" unless otherwise specified or described individually. DPW is responsible for maintaining over 300 miles of roadway and associated facilities including roadway shoulder areas, roadside ditches, ditch relief culverts, bridges, green infrastructure (GI)- based stormwater facilities, and flood control facilities in active flood control zones. DPW is also responsible for conducting vegetation management at two small municipal airports including the Half Moon Bay Airport and San Carlos Airport, and closed landfills including the Pescadero Landfill and Half Moon Bay Landfill. The Parks Department is responsible for maintaining various County park and recreational facilities, including trails and campgrounds.

1.2 PROGRAM BACKGROUND

To date, the County has developed, permitted, and conducted maintenance activities as individual discrete actions. The purpose of developing the proposed program is to provide a more comprehensive and consistent approach to conducting routine maintenance activities. Administered as a program, versus a series of individual maintenance activities, the County will follow a consistent set of maintenance methods, best management practices (BMPs), and impact avoidance approaches.

Administering routine maintenance programmatically also facilitates using longer-term regulatory permits from authorizing agencies. Historically, the County has experienced months and even years of permitting delays for routine maintenance projects. These delays in turn are costly and increase the flooding risk, failure, or accelerated erosion by keeping some facilities from operating at their intended level of function.

The County developed the Routine Maintenance Program Manual (Manual) to describe the various routine maintenance activities conducted at County roads, trails, campgrounds, picnic areas, bridges, culverts, ditches, and the Coyote Point Marina. The Manual is included

in **Appendix A** and includes descriptions of County facilities, natural resources at County facilities and in the program area, and programmatic guidance to avoid and minimize potential environmental impacts when conducting routine maintenance work. The County of San Mateo Routine Maintenance Program is the project for this CEQA analysis.

1.3 OVERVIEW OF CEQA REQUIREMENTS

CEQA has several basic purposes:

- Inform governmental decision makers and the public about the potential significant environmental effects of proposed activities.
- Identify the ways in which environmental damage can be avoided or substantially reduced.
- Prevent significant, avoidable damage to the environment by requiring implementation of feasible mitigation measures or project alternatives that would substantially lessen any significant effects that a project would have on the environment.
- Disclose to the public the reasons why a governmental agency approved a project in the manner the agency chose if significant environmental effects are involved.

With certain, strictly limited exceptions, CEQA requires all state and local government agencies to consider the environmental consequences of projects over which they have discretionary authority before approving or carrying out projects. CEQA establishes both procedural and substantive requirements that agencies must satisfy to meet CEQA's objectives. For example, the agency with principal responsibility for approving or carrying out a project (the lead agency) must first assess whether a proposed project would result in significant environmental impacts. If there is substantial evidence that the project would result in significant environmental impacts, CEQA requires that the agency prepare an EIR analyzing both the proposed project and a reasonable range of potentially feasible alternatives.

As described in the CEQA Guidelines (Cal. Code Regs., tit. 14, Section 15121, subd. [a]), an EIR is an informational document that assesses potential environmental effects of a proposed project and identifies mitigation measures and alternatives to the project that could reduce or avoid potentially significant environmental impacts. Other key CEQA requirements include developing a plan to implement and monitor the success of the identified mitigation measures and carrying out specific public notice and distribution steps to facilitate public involvement in the environmental review process. As an informational document used in the planning and decision-making process, an EIR's purpose is not to recommend either approval or denial of a project. Note that an EIR does not expand or otherwise provide independent authority for the lead agency to impose mitigation measures or avoid project-related significant environmental impacts beyond the authority already within the lead agency's jurisdiction.

1.4 SCOPE AND INTENT OF THIS DOCUMENT

The County is the lead agency for the CEQA process and has discretionary review and approval authority for project activities that are subject to CEQA (CEQA Guidelines, Section 15378). The County will use the analyses presented in this DEIR, and the public response to them, to evaluate the proposed program's environmental impacts. The County of San Mateo Planning Commission will be responsible for considering the potential certification of this DEIR.

The intent of this DEIR is to evaluate in detail the routine maintenance activities to be conducted under the proposed program. The analysis in the DEIR has been prepared at a project level in accordance with State CEQA Guidelines Section 15161. Accordingly, this DEIR focuses on the changes in the environment that could result during all phases of the project, including maintenance planning and implementation, such that the DEIR adequately satisfies all CEQA requirements to support project implementation without the need for further CEQA documentation.

1.5 CEQA PROCESS

The following discussion explains the steps in the CEQA process.

1.5.1 NOTICE OF PREPARATION

A Notice of Preparation (NOP) for the proposed program was prepared in accordance with the State CEQA Guidelines (CEQA Guidelines Section 15082) and was circulated to the Office of Planning and Research's State Clearinghouse on January 4, 2019. The scoping period started on January 7, 2019 and continued for 30 days, concluding on February 5, 2019. The NOP presented general background information on the proposed program, the scoping process, and the environmental issues to be addressed in the DEIR. Copies of the NOP were distributed by mail to a broad range of stakeholders, including state, federal, and local regulatory agencies and jurisdictions, utilities, and nonprofit organizations in the County. In addition, the NOP and public scoping meeting information was published on the County's website (publicworks.smcgov.org/our-projects). The NOP is included in this DEIR in **Appendix B**.

1.5.2 SCOPING COMMENTS AND MEETING

To provide the public, as well as responsible and trustee agencies, an opportunity to ask questions and submit comments on the proposed program and the scope of the DEIR, the County held a public scoping meeting during the public scoping period. As described above, notices of the meeting were mailed to interested parties; in addition, scoping meeting information was published on the County's website prior to the event (publicworks.smcgov.org/our-projects).

The scoping meeting was held at the following time and location:

Tuesday, January 29, 2019 from 6:00 p.m. to 8:00 p.m. at 455 County Center, Room 101, Redwood City.

In addition to County and consultant staff, one individual attended the scoping meeting. The County accepted written comments at the meeting, as well as during the 30-day scoping period. Comment forms were distributed at the scoping meeting for submission of written comments during or after the meeting. During the scoping period, four comment letters were received. These comments were considered in this CEQA evaluation and are included in Appendix B.

1.5.3 DRAFT EIR

The County has prepared this DEIR, as informed by public and agency input received during the scoping period, to disclose environmental impacts associated with the proposed program. Where any such impacts are significant, feasible mitigation measures and potentially feasible alternatives that would substantially lessen or avoid such effects are identified and discussed. The public review period provides the public an opportunity to provide input to the lead agency on the DEIR.

1.5.4 DISTRIBUTION OF THE DRAFT EIR AND MEETINGS

The DEIR is currently undergoing public review for 45 days. During this period, the County will hold one public meeting at 455 County Center, Room 101, Redwood City on March 10, 2020 at 6:00 p.m. The meeting will begin with a brief overview of the proposed project and the analysis and conclusions set forth in the DEIR. The introductory presentation will be followed by the opportunity for interested members of the public to provide comments to the County regarding the proposed program and the DEIR. Commenters may provide oral or written comments, or both.

The date, time, and exact location of the public meeting will be published on the County website prior to the meeting and are included in the Notice of Availability of this DEIR.

1.5.5 CERTIFICATION OF THE FINAL EIR

Once the public review period is closed, a Final EIR (FEIR) will be prepared. The FEIR will incorporate this DEIR by reference. It will contain all comments submitted on this DEIR (including those made at public meetings), responses to those comments, and any revisions to the text of this DEIR. The FEIR will be considered by the County of San Mateo Planning Commission.

Written and oral comments received in response to the DEIR will be addressed in the Responses to Comments section of the FEIR. Together with the DEIR and any related changes to the substantive discussion in the DEIR, these responses will constitute the FEIR. The FEIR, in turn, will inform the County's exercise of its discretion as a lead agency under CEQA in deciding whether or how to approve the proposed program.

1.6 ORGANIZATION OF THIS DEIR

This DEIR contains the following components:

Executive Summary. A summary of the proposed program, the issues of concern, project alternatives, and environmental impacts and mitigation measures are provided in this chapter.

Chapter 1, ***Introduction***. This chapter describes the purpose and organization of the DEIR and its preparation, review, and certification process.

Chapter 2, ***Project Description***. This chapter summarizes the proposed program, including a description of the proposed program purpose and objectives, a brief description of the program area, proposed actions that would be taken under the proposed program, and related permits and approvals associated with the activity.

Chapter 3, ***Environmental Setting, Impacts, and Mitigation Measures***. This chapter contains an introduction to the impact analysis conducted in this DEIR and identifies resource topic areas determined not to be affected by the proposed program (Section 3.1). Sections 3.2 through 3.16 describe the environmental resources and potential environmental impacts of the proposed program. Each of these sections describes the existing setting and background information for the particular resource topic. The purpose of providing this background is to give the reader an understanding of the resources that could be affected by the proposed program. Each of these resource sections includes a discussion of the criteria used to determine the significance levels of the proposed program's potential impacts. Each section also provides mitigation measures to reduce, where possible, any adverse effects from potentially significant impacts.

Chapter 4, ***Other Statutory Considerations***. This chapter addresses the proposed program's potential to contribute to cumulative impacts, defined as the incremental impact of the proposed program when added to other related impacts of past, present, and reasonably foreseeable future projects.

Chapter 5, ***Alternatives***. This chapter describes the process by which alternatives to the proposed program were developed and screened. This chapter also evaluates likely environmental impacts of the potential alternatives and identifies the environmentally superior alternative.

Chapter 6, ***References***. This chapter provides a bibliography of printed references, websites, and personal communications used in preparing this DEIR.

Chapter 7, ***Report Preparation***. This chapter provides a list of preparers from the County of San Mateo, Horizon Water and Environment, LLC, and H. T. Harvey and Associates

Appendices

Appendix A, *County of San Mateo Routine Maintenance Program Manual*

Appendix B, *Notice of Preparation, Scoping Meeting Materials, Scoping Comments and Summary Notes*

Appendix C, *Local Plans and Policies*

Appendix D, *Air Quality Technical Appendix*

Appendix E, *Noise Calculations*

1.7 IMPACT TERMINOLOGY AND USE OF LANGUAGE IN CEQA

This DEIR uses the following terminology to describe environmental effects of the proposed program:

- A finding of *no impact* is made when the analysis concludes that the proposed program would not affect the particular environmental resource or issue.
- An impact is considered *less than significant* if the analysis concludes that there would be no substantial adverse change in the environment and that no mitigation is needed.
- An impact is considered *significant* or *potentially significant* if the analysis concludes that there could be a substantial adverse effect on the environment.
- An impact is considered *less than significant with mitigation* if the analysis concludes that there would be no substantial adverse change in the environment with the inclusion of the mitigation measures described.
- An impact is considered *significant and unavoidable* if the analysis concludes that there could be a substantial adverse effect on the environment and that no feasible mitigation measures are available to reduce the impact to a less-than-significant level.
- *Mitigation* refers to specific measures or activities adopted to avoid, minimize, rectify, reduce, eliminate, or compensate for an impact.
- A *cumulative impact* can result when a change in the environment results from the incremental impact of a project when added to other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively substantial projects. The cumulative impact analysis in this DEIR focuses on whether the proposed program's incremental contribution to significant cumulative impacts caused by past, present, or probable future projects is cumulatively considerable (i.e., significant).
- Because the term "significant" has a specific usage in evaluating impacts under CEQA, it is used only to describe the significance of impacts and is not used in other contexts within this document. Synonyms such as "substantial" have been used when not discussing the significance of an environmental impact.

1.8 SUBMITTAL OF COMMENTS

The County is circulating this DEIR for a 45-day public review and the comment period will end on April 10, 2020. As discussed above, the County will host one public meeting during this period at which oral and written comments will be received. The purpose of public circulation and the public meeting is to provide agencies and interested individuals with opportunities to comment on or express concerns regarding the contents of this DEIR. Specific date, time, and location for this meeting will be provided in the Notice of Availability, on the County's website, and through several other notification methods.

Written comments concerning this DEIR can be submitted at the public meeting described above or at any time during the DEIR public review period. All comments must be received by 5:00 p.m. on April 10, 2020 directed to the name and address listed below:

Contact Name: Krzysztof Lisaj, Senior Civil Engineer

Address: County of San Mateo
555 County Center, 5th Floor
Redwood City, CA 94063

Phone Number: (650) 599-1436

Email: SMC_RMP_Comments@smcgov.org

Submittal of written comments by e-mail (Microsoft Word or portable document format [PDF]) would be greatly appreciated. Written comments received in response to this DEIR during the public review period will be addressed in the Responses to Comments section of the FEIR.

All documents mentioned herein or related to this project can be reviewed online at the County's website (publicworks.smcgov.org/our-projects).

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Chapter 2
Project Description

2.1 INTRODUCTION

This document evaluates the potential environmental effects of the County of San Mateo Routine Maintenance Program (proposed program) to provide the public, relevant public agencies, and stakeholders with information about the proposed program and its potential environmental effects. For the purposes of compliance with the California Environmental Quality Act (CEQA), this document evaluates the Routine Maintenance Program as the proposed project under CEQA.

2.2 PROGRAM OBJECTIVES

The objectives of the proposed program include:

- Maintain the functional integrity and operational quality and capacity of County of San Mateo (County) channels, stormwater facilities, roads, trails, and other recreational facilities.
- Prevent roadway flooding, reduce safety hazards, and minimize potential threats to the structural integrity of roadways, bridges, and stormwater and channel facilities within unincorporated San Mateo County.
- Repair and stabilize eroding streambanks and failing culverts in a timely manner to prevent larger-scale slope failures, avoid emergencies, and minimize sedimentation to downstream water bodies.
- Maintain County facilities and vegetation conditions for public safety purposes including, maintaining visibility, reducing fire risk, and reducing the potential for unauthorized encampments.
- Avoid and minimize potential impacts to the natural environment when conducting routine maintenance activities by incorporating detailed appraisals of habitat, species, and resource conditions while identifying and prioritizing maintenance needs and developing site-specific maintenance plans.
- Protect and enhance the natural environment at County facilities.
- Provide regulatory assurance to enable long-term permits with fewer delays and improved work planning and implementation.

- Develop mitigation approaches in a more strategic and integrative manner that targets areas in the County that could benefit from habitat enhancement, restoration, and/or preservation.

2.3 PROGRAM AREA AND MAINTENANCE ZONES

The program area is located within San Mateo County, California (**Figure 2-1**). The program area consists of two physiographic regions: (1) County areas draining to San Francisco Bay (Bayside); and (2) County areas draining to the Pacific Ocean (Coastside). The County is physiographically divided by the crestline of the Santa Cruz Mountains and these regions reflect the principal drainage patterns either to the Bay or to the Pacific Ocean. Within these two regions, routine maintenance areas in the County are further located according to County maintained roads, trails, parks, and channels and stream courses. **Figures 2-2 through 2-6** provide additional sub-regional maps for the Bayside and Coastside maintenance areas. Figures B-1 through B-7 in the Manual (Appendix A of this DEIR show the locations of sites that have either been maintained by the County in recent years or are expected to be maintained in the next 5-10 years. While many of these sites are located in unincorporated areas of San Mateo County, several County-maintained areas are located in incorporated areas of San Mateo County.

The proposed program addresses routine maintenance activities countywide. While the maintenance locations presented in the Manual (Tables B-1 and B-2 and Figures B-1 through B-7) represent anticipated maintenance locations, not every site could be determined at the time of developing the Manual. The proposed program includes maintenance activities countywide that are consistent with those described below in Section 2.4.

Since 1980, the County has assumed responsibility for implementing the California Coastal Act through administering its Local Coastal Program (LCP). The LCP guides, reviews, and authorizes potential development in the coastal zone. The Coastal Zone Boundary shown in Figure 1-1 shows the portions of the County (along the Coastside) where the County's LCP applies.

Figure 2-4
North Coastside
of San Mateo County
Maintenance Area

Figure 2-2
North Bayside
of San Mateo County
Maintenance Area

Figure 2-5
Central Coastside of
San Mateo County
Maintenance Area

Figure 2-3
South Bayside
of San Mateo County
Maintenance Area

Figure 2-6
South Coast Side
of San Mateo County
Maintenance Area

Navigable Slough

San Bruno Creek

Hydrologic Features

- Major Creek
- Other Creeks and Drainages
- Lake / Pond
- Ocean / Bay

Transportation

- Highway / Major Road
- Airport

Administrative Areas

- County Park
- Incorporated City
- Unincorporated Area

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary
- Coverage Area of Detailed Figures

N

0 1.25 2.5 5
Miles

Horizon WATER and ENVIRONMENT

Figure **2**-*1*

San Mateo County Maintenance Area

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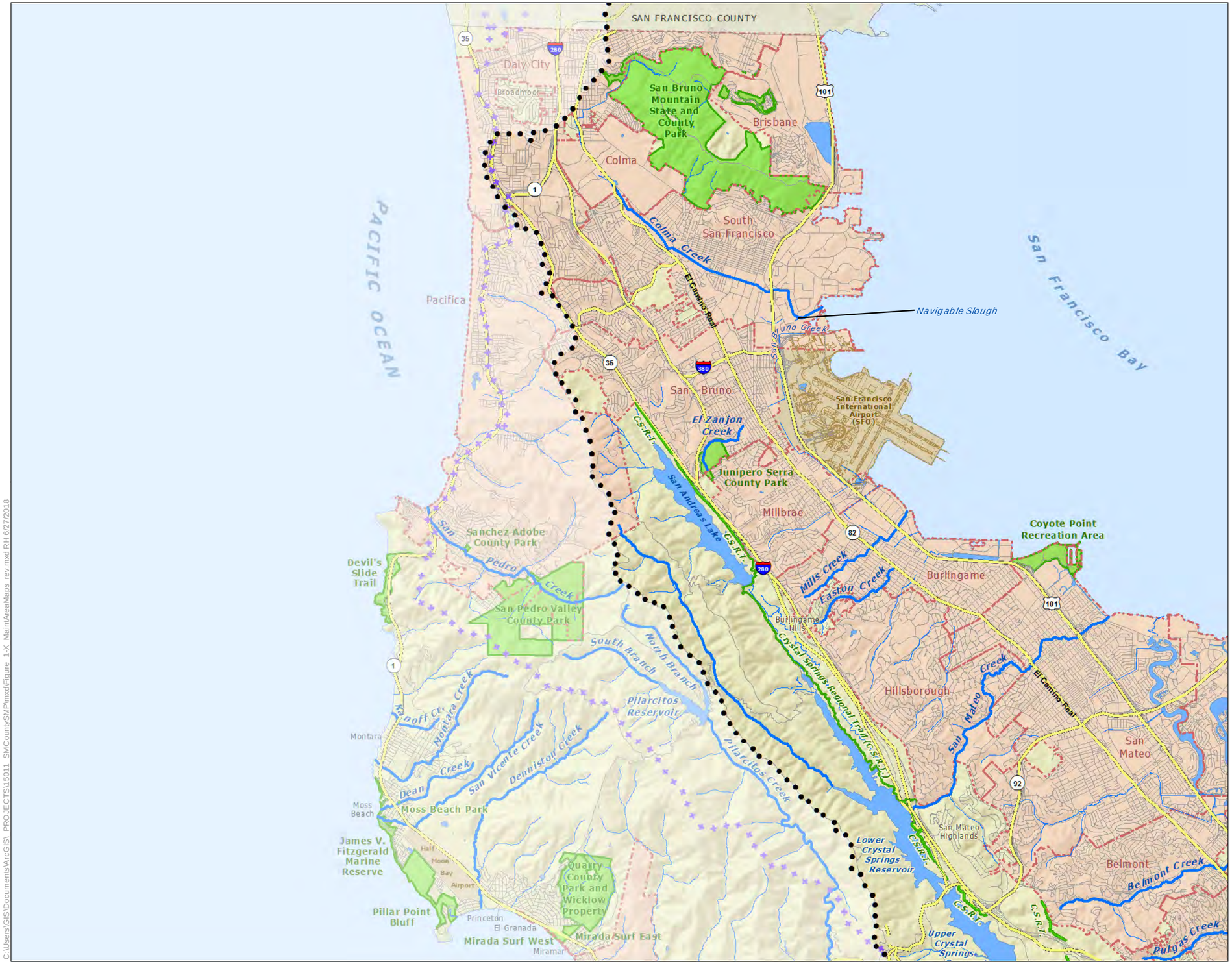

Figure **2**-*2*

*North Bay**s**ide of San Mateo County Maintenance Area*

Hydrologic Features

- Major Creek
- Other Creeks and Drainages
- Lake / Pond
- Ocean / Bay

Admnistrative Areas

- County Park
- Colma — Incorporated City
- Montara — Unincorporated Area

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Transportation

- Highway / Major Road
- Street
- Airport

N

0 1 2 4 Miles

Horizon WATER and ENVIRONMENT

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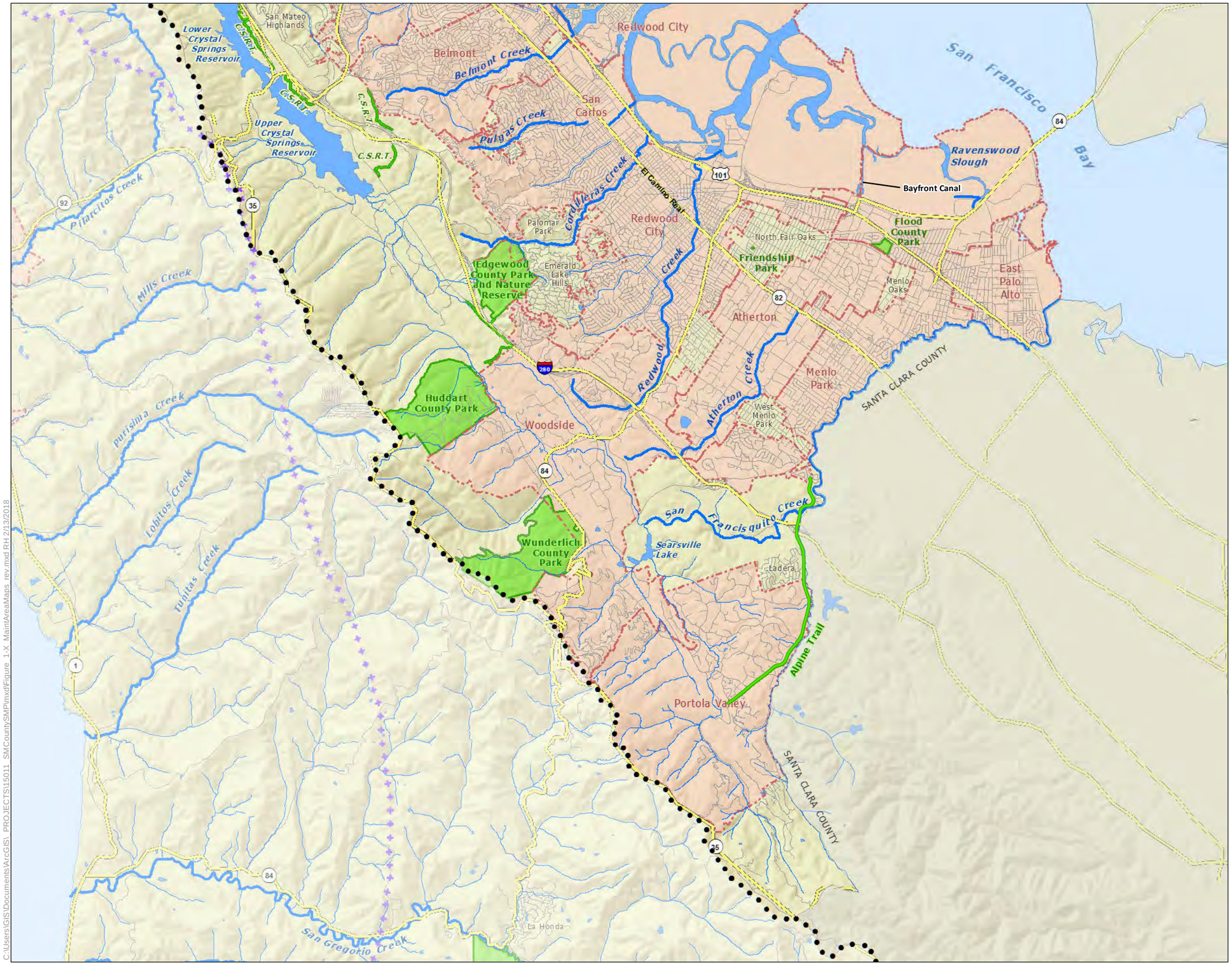
Figure 2-3

South Bayside of San Mateo County Maintenance Area



Hydrologic Features

- Major Creek
- Other Creeks and Drainages
- Lake / Pond
- Ocean / Bay

Admnistrative Areas

- County Park
- Colma — Incorporated City
- Montara — Unincorporated Area

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Transportation

- Highway / Major Road
- Street
- Airport

N

0 1 2 4 Miles

Horizon WATER and ENVIRONMENT

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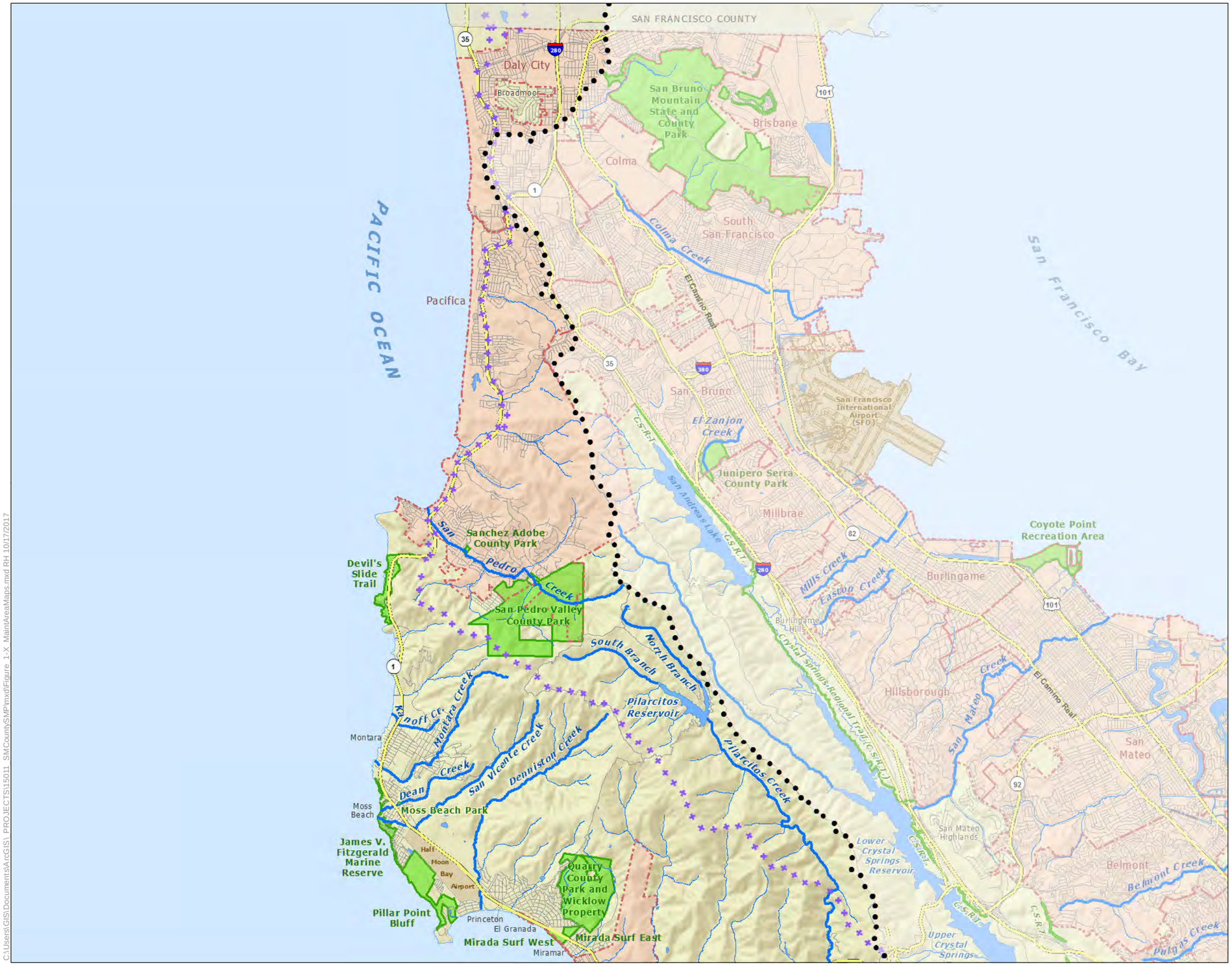
Figure 2-4

North Coastside of San Mateo County Maintenance Area



Hydrologic Features

- Major Creek
- Other Creeks and Drainages
- Lake / Pond
- Ocean / Bay

Admnistrative Areas

- County Park
- Colma — Incorporated City
- Montara — Unincorporated Area

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Transportation

- Highway / Major Road
- Street
- Airport

N

0 1 2 4 Miles

Horizon WATER and ENVIRONMENT

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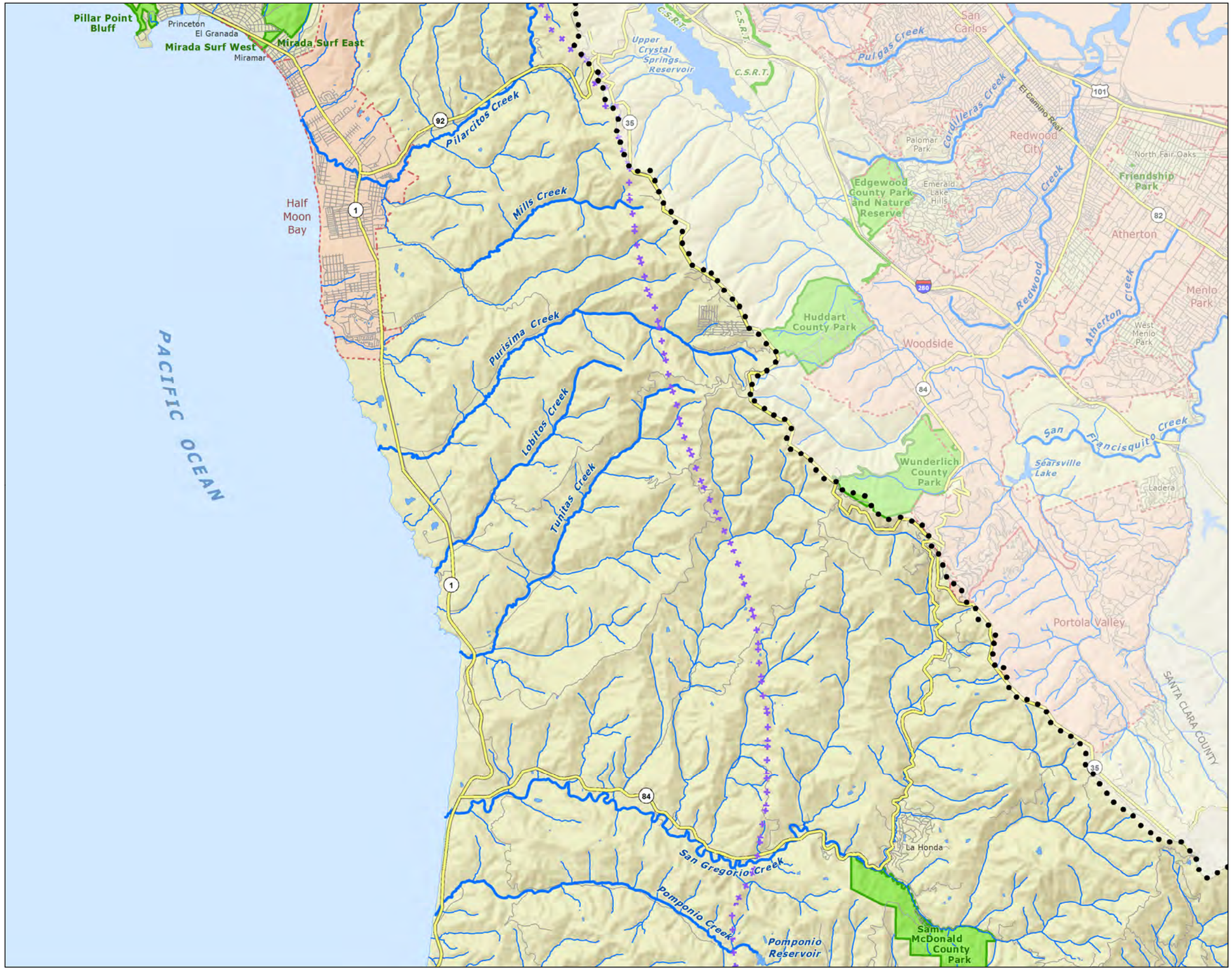
Figure 2-5

Central Coastside of San Mateo County Maintenance Area



Hydrologic Features

- Major Creek
- Other Creeks and Drainages
- Lake / Pond
- Ocean / Bay

Administrative Areas

- County Park
- Colma — Incorporated City
- Montara — Unincorporated Area

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Transportation

- Highway / Major Road
- Street
- Airport

N

0 1 2 4 Miles

Horizon WATER and ENVIRONMENT

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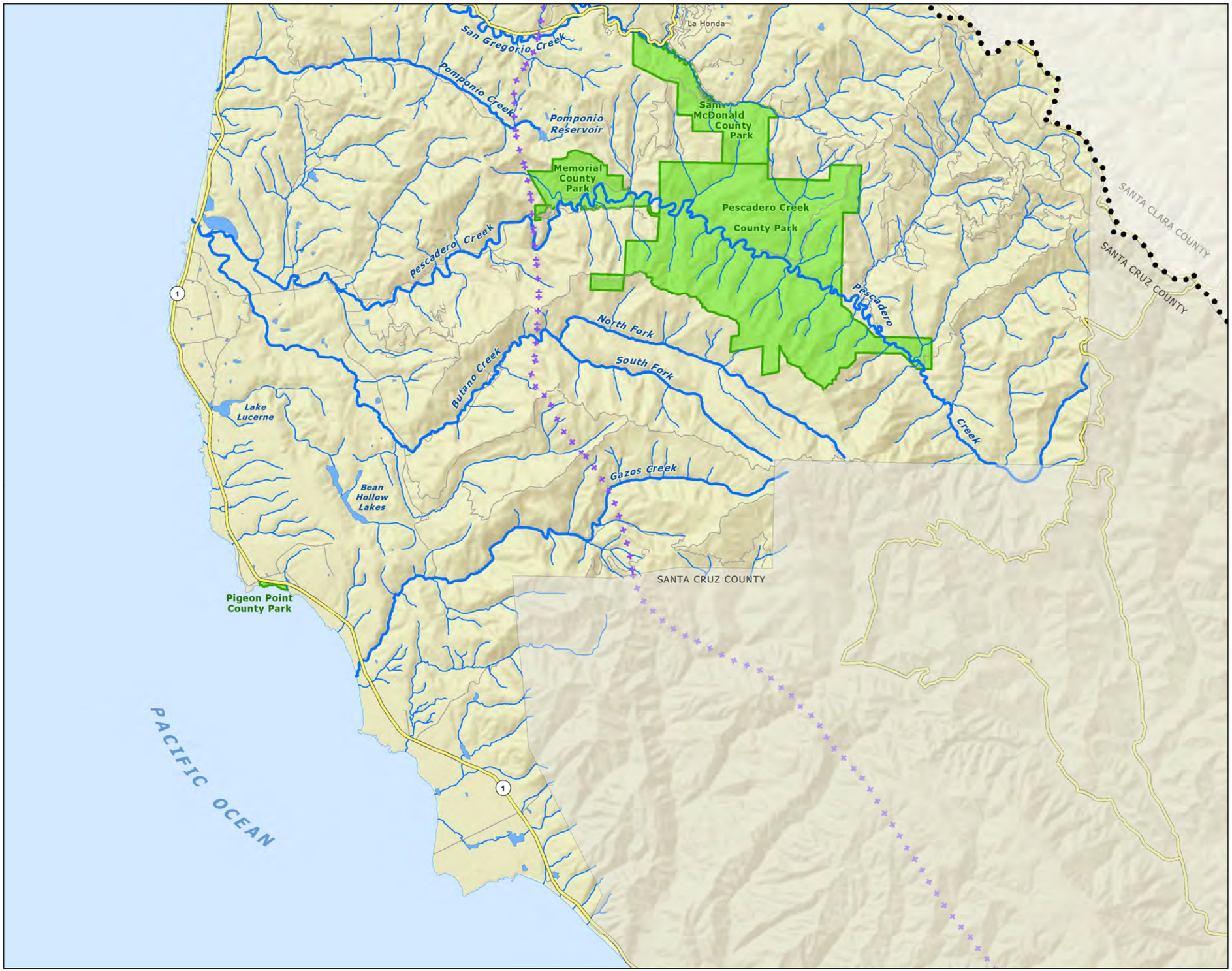
Figure 2-6

South Coastside of San Mateo County Maintenance Area



Hydrologic Features

- Major Creek
- Other Creeks and Drainages
- Lake / Pond
- Ocean / Bay

Administrative Areas

- County Park
- Colma — Incorporated City
- Montara — Unincorporated Area

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Transportation

- Highway / Major Road
- Street
- Airport

N

0 1 2 4 Miles

Horizon WATER and ENVIRONMENT

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2.4 MAINTENANCE ACTIVITIES

The proposed program has seven primary activities: culvert, bridge and other storm drainage maintenance; roadside ditch and swale maintenance; sediment removal; bank stabilization; vegetation management; road and trail maintenance; and marina maintenance activities. A summary of the routine maintenance activities proposed by facility type or feature is described in **Table 2-1** below.

Table 2-1. Summary of Key Facility Types and Maintenance Activities

Facility or Feature	Maintenance Activity
On-channel crossings	Culvert repair or replacement Sediment and debris removal
Bridges	Erosion protection at bridge abutments Apply protective paint coating Seal/repair cracks on bridge deck and concrete surfaces
Roadside ditch relief culverts	Culvert repair or replacement Sediment and debris removal
Flood control channels, drainages and creeks (engineered and non-engineered)	Sediment and debris removal Bank stabilization Downed tree management Vegetation management Tide gate maintenance and repair Spalled or cracked concrete repair Repair of existing rock slope protection (RSP) along creek banks Floodwall maintenance (graffiti removal, localized vegetation management, and other minor repairs) Levee maintenance (repair damage from animals, in-kind repair of existing RSP, crack repair, repair slip-outs along levee face)
Roadside ditches and swales	Ditch or swale resurfacing Sediment and debris removal Vegetation management
Roads	Repaving and repair of damaged paved roads Street sweeping on paved roads Slip-out and slide repairs (including removal of slide material) Mowing, trimming, and pruning vegetation along County roads
Trails, campgrounds, picnic areas, and other County Parks features	Trail tread repair and re-grading Mowing, trimming, and pruning vegetation along trails Non-native vegetation removal (e.g. herbicide, grazing, mechanical) Fire fuel management
Green Infrastructure (GI)	Vegetation and thatch removal Light sediment and debris clearing and planting

Facility or Feature	Maintenance Activity
Marina facilities including docks, sewer lines/tanks, water lines, launch ramp, and seawall revetment	Repair/replace damaged dock boxes and concrete Periodic sewer line/ejector tank cleaning Water line inspections Replace damaged floats, cleats and bumper striping Debris removal from launch ramp Seawall revetment repair and riprap replacement
Storm drain facilities (storm drain pipes, manholes, catch basins, trash capture devices, flap gates, pump stations, diversion structures)	Trash and debris clearing Flushing and cleaning Repair and replacement of storm drain pipes, pumps, wet wells, and flap gates Pump station building and diversion structure maintenance

The majority of near-term maintenance activities involve vegetation management, repair or replacement of deteriorating culverts, bank stabilization, sediment removal, bridge maintenance, and trail maintenance. Tables B-1 and B-2 (provided in Appendix A of this DEIR) and the sites shown in Figures B-1 through B-7 (provided in Appendix A) identify anticipated routine maintenance sites. While the proposed program covers routine maintenance activities Countywide, the sites and maintenance projects identified in Tables B-1 and B-2 provide a good basis to understand future maintenance activities that are expected to occur under the proposed program in the next 5-10 years but do not represent the entirety of possible maintenance locations. It is impossible to anticipate all maintenance locations at the time of developing the Manual. While the maintenance locations presented in Tables B-1 and B-2 represent the anticipated maintenance locations, not every site can be known at this time. However, the proposed program only includes maintenance activity types that are described in the Manual. **Figure 2-7** includes photographs of typical County culverts, ditches, bridges, GI facilities, and swales that require maintenance. **Figure 2-8** includes photos of example bank stabilization sites covered by the proposed program. **Figure 2-9** includes photographs of typical vegetation management areas in the proposed program. Maintenance Manual Appendix H (provided in Appendix A of this DEIR) provides a description of some culverts and bank stabilization sites that require maintenance, including their physical setting and biological/habitat conditions.

Photo 1. Deteriorated corrugated metal pipe (CMP) culvert located at Pigeon Point Road that requires replacement. (March 2007)

Photo 2. Deteriorated CMP culvert on Alpine Creek that requires replacement. (August 2016)

Photo 3. George Street bridge. Sediment and vegetation removal needed in the future. Bridge could also benefit from paint removal. (December 2010)

Photo 4. Pescadero Creek Road bridge near Cloverdale Road that requires routine maintenance including scour and erosion protection improvements at the base of the abutments. (April 2017)

Photo 5. Sediment removal needed at the San Bruno Creek and Walnut Street crossing. (February 2018)

Photo 6. Sediment with vegetation growing on top of it in Belmont Creek at Old County Road. (September 2011)

Figure 2-7. San Mateo County Facilities – Culverts, Bridges, Ditches and Swales

Photo 7. Paved ditch downstream of Farallone Avenue and Kanoff Street in Montara. Ditch is routinely maintained with a Vac-Con truck. (May 2015)

Photo 8. LID enhancements consisting of turf reinforcement mat, native grass sod, and rock check-dams that were recently installed along Farallone Avenue in Montara. (May 2015)

Photo 9. Concrete box culvert at Cloverdale Road and Butano Cutoff Road in Pescadero. Potential need for sediment and vegetation removal in the future. (May 2015)

Photo 10. Concrete box culvert at Crystal Springs Road (near Polhemus Road) on San Mateo Creek. Potential maintenance needs include concrete patching of middle culvert wall. (May 2015)

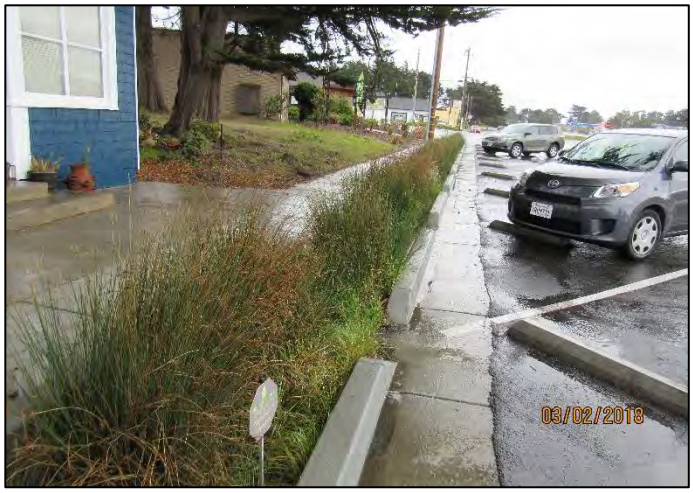

Photo 11. Bioretention swale along Carlos Street in Moss Beach that requires periodic vegetation removal, light sediment clearing, and planting. (March 2018)

Photo 12. Bioretention swale at the Fitzgerald Marine Reserve parking lot, which requires periodic vegetation removal, light sediment clearing and revegetation. (January 2016)

Figure 2-7. San Mateo County Facilities – Culverts, Bridges, Ditches and Swales

Photo 13. Example of an inboard unpaved ditch along Gazos Creek Road. (December 2019)

Photo 14. Another example of an inboard unpaved ditch along Gazos Creek Road. (December 2019)

Photo 15. Example of an inboard unpaved ditch along Bean Hollow Road. (December 2019)

Photo 16. Example of an unpaved ditch and roadside culvert along Pescadero Creek Road and entrance to Sam McDonald Park. (December 2019)

Photo 17. Example of an unpaved ditch along Alpine Road. (December 2019)

Photo 18. Example of a paved ditch along Occidental Way in the Emerald Hills neighborhood. (May 2015)

Figure 2-7. San Mateo County Facilities – Culverts, Bridges, Ditches and Swales

Photo 1. Example slope failure above unnamed tributary to Alpine Creek. This site was addressed in the County's 2017 emergency permit application. (March 2017)

Photo 2. Bank failure along Lower Bear Gulch Road and adjacent to Clear Creek, an intermittent tributary to San Gregorio Creek. (February 2016)

Figure 2-8. Example Creek Bank and Road Embankment Stabilization Sites

Photo 3. Example slope failure along Gazos Creek and Gazos Creek Road. This site was addressed in the County's 2017 emergency permit application. (March 2017)

Photo 4. Completed bank stabilization site along Gazos Creek and Gazos Creek Road.

Figure 2-8. Example Creek Bank and Road Embankment Stabilization Sites

Photo 5. Example of soil nailing at a bank stabilization site along Alpine Road. (September 2014)

Photo 6. Example of a retaining wall at a bank stabilization site along Alpine Road. (October 2014)

Figure 2-8. Example Creek Bank and Road Embankment Stabilization Sites

Photo 7. Example of a solider pile wall fronted with rock, rootwads, and vegetation following installation at Los Trancos Rd. (November 2017)

Photo 8. Example of a solider pile wall with grown-in vegetation at Los Trancos Rd. (March 2018)

Figure 2-8. Example Creek Bank and Road Embankment Stabilization Sites

Photo 1. Vegetation that has recently been weed whacked along Stage Road in Pescadero. (May 2015)

Photo 2. Example area that underwent hazardous tree removal in La Honda Creek (near Entrada Way). Photo shows mass of soil and redwood roots in middle portion of channel. (May 2015)

Photo 3. Meadow near Hoffman Creek Trail in Pescadero Creek County Park that routinely gets mowed. (May 2015)

Photo 4. Towne Fire Road in Pescadero Creek County Park where fuel management activities occur. (May 2015)

Photo 5. Fuel management area in Quarry County Park in Half Moon Bay. (May 2015)

Photo 6. County staff conducting vegetation trimming and weed whacking activities along Weiler Ranch Trail in San Pedro Valley Park. (May 2015)

2.4.1 CULVERT, STORM DRAINAGE, CHANNEL, AND BRIDGE MAINTENANCE

Culvert Repair and Replacement

The County owns and maintains many culverts at road and trail crossings, which commonly require routine repair or replacement due to aging and material deterioration, damaged headwalls, eroding outlets, misalignment, or improper sizing. Culvert failure or deterioration typically reduces the hydraulic capacity due to flow obstruction and blocking, sediment accumulation, or other debris that collects as a result of the damaged or failed culvert. Culvert degradation or failure may also lead to increased erosion due to bypassing flows or more concentrated flows in the area of the damaged or non-operating culvert.

The proposed program addresses repair and replacement of standard culverts generally 60 inches or less in diameter within the County's jurisdiction. Typical culvert replacement activities are 25 to 60 feet in length. For a typical culvert replacement, existing pipe comprised of corrugated metal pipe (CMP), reinforced concrete pipe (RCP), or high-density polyethylene (HDPE) is replaced with HDPE or CMP pipe sized for adequate capacity. The culverts are generally sized to convey the 100-year design flow. Work typically involves trenching, removing the existing culvert, replacing it, backfilling the trench and compacting the soil or fill material, and repaving if the culvert is at a road crossing. Depending on the site, this activity may also involve slip-lining, concrete lining, stabilizing the area beneath a culvert, or installing flumes or other energy dissipaters at culvert outlets.

The slope and gradient of replacement culverts that are discharging to a ditch, creek, or channel are aligned with the receiving water course to maintain stream course continuity and to avoid washout or erosion of the stream bed, stream banks, and/or other earthen material. Typically, surface disturbance is limited to less than 5 linear feet from the culvert inlet and outlet. Depending on where the culvert replacement takes place, equipment is generally operated from the roadway, roadway shoulders, or maintenance access road or trail adjacent to the culvert. To the extent possible, staging of equipment and materials also occurs within the roadway right-of-way above and outside of active channels.

For the purposes of the proposed program and EIR, it is assumed that the County would conduct up to 28 culvert replacement projects in a given year. This number of projects was identified based on historic County annual needs, but also placing a maximum limit on annual culvert activity as an impact avoidance and minimization measure. Culvert repair and replacement activities on non-fish bearing streams would be limited to 150 linear feet per site and 1,500 linear feet annually. On fish-bearing streams, these activities would be limited to 100 linear feet per site and one such project per year.

Other Maintenance Activities Associated with Culverts and Other Storm Drainage Facilities

Other storm drainage maintenance activities conducted by the County include clearing clogged culvert inlets, culvert outfalls, flap gates, diversion structures, storm drains, manholes, catch basins, and other storm drainage facilities in unincorporated areas of the County. Pump stations are also checked routinely to confirm they are in operational condition. In general, storm drainage facilities in unincorporated areas are inspected annually in the fall prior to the rainy season and throughout the rainy season during the County's routine patrols to evaluate their operational performance and maintenance needs.

Routine maintenance of these structures generally involves clearing debris by hand. If clearing debris from culverts cannot be accomplished by hand, Vac-Con trucks are used. In addition, where fallen trees and large woody debris have accumulated at culvert inlets or outfalls, the County removes the trees and woody debris.

Channel Maintenance

Flood control channel maintenance involves repairing damaged or failed sections of concrete channels, repairing existing rock slope protection, maintaining tide gates, and maintenance of levees and floodwalls.

Concrete Channel Repair

Minor damage to concrete channel walls or beds, such as crumbling, cracking, chipping would be repaired using grout. Larger-scale repair work may require concrete patching or reforming of the channel wall. This work would only be conducted when channel flows are at its lowest or completely dry. In addition, periodic cleaning of weep holes (small holes in concrete channel walls) may be necessary to prevent blockage and allow water to drain. These would be cleaned outside the typical breeding season for birds to avoid impacts on migratory birds.

Repair of Existing Channel Rock Slope Protection

Where existing rock slope protection is already present, but has fallen or sloughed in place, the County would conduct in-kind repairs by replacing the missing or damaged rocks. This work would be conducted to ensure rock slope protection is operating as intended and to prevent or minimize bank erosion.

Tide Gate Maintenance

DPW maintains a tide gate at the creek mouth of San Bruno Creek and the Bay. Tide gates prevent the tide from flowing upstream into the channel but allow water to flow out of the channel into the Bay when water levels in the channel are high. They also protect creeks and adjacent land uses from storm surges and high-tides. If not properly maintained, debris blockages at the tide gate could result in backwatering effects and flooding upstream. The County removes accumulated debris and trash at the tide gate to reduce the risk of flooding. The flaps on tide gates are also replaced on an as-needed basis. Tide gates require periodic repainting for corrosion protection and replacement.

Floodwall and Levee Maintenance

Sheetpile floodwalls along County maintained channels would also be routinely inspected by the County The floodwalls would be visually inspected on a quarterly basis. If observed damage threatens the integrity of the structure, minor repairs would be conducted to return the floodwalls to the as-built design. Such work would typically entail graffiti removal, removal of some vegetation to allow visual inspection of the floodwall, removing rust, adding protective coatings, replacing rubber gaskets or seals at access gates, and other periodic repairs to prevent or correct erosion near the floodwalls.

Levees along flood control channels require maintenance to ensure the structural integrity of the structures. Levees that would potentially require maintenance under the proposed program include earthen engineered sections of the Colma Creek flood control channel (from

Utah Avenue to the mouth of the creek in South San Francisco) and a section of San Francisquito Creek (between U.S. Highway 101 upstream to Euclid Avenue in East Palo Alto). Levee maintenance activities involve filling in burrow holes for rodent control, replacing fallen rocks, repairing cracks, and repairing slip-outs along the face to prevent erosion. Open burrows are filled with earth material and compacted for a smooth finish with the surrounding levee surface. Other activities include replacement of fallen rocks, repairing cracks, and repairing slip-outs along the face to prevent erosion. Slip-out repairs would be conducted using similar methods as outlined in Section 2.4.6, under "Roadway Maintenance and Repair."

Bridge Maintenance

Bridge maintenance involves conducting erosion protection improvements at the base of bridge abutments, repairing guard railings and the decking on bridges, sealing joints, patching up cracks on the bridge exterior, removing and reapplying paint, conducting general surface and deck treatments, reinforcing steel with galvanic protection, and clearing debris. Typical bridge maintenance activities occur within the footprint of the existing bridge or immediately adjacent area, within 25 feet upstream and 25 feet downstream of the bridge. If the lower portion of a bridge requires maintenance, dewatering may be required to obtain access. For the purposes of this environmental impact report (EIR), it is assumed that the County would typically conduct up to eight bridge maintenance projects in a given year, including: three major projects involving scour improvements, one minor bridge maintenance project led by DPW, and four minor bridge maintenance projects led by County Parks. Total annual channel work limits associated with bridge maintenance would be 500 linear. This is a maximum work limit based on routine conditions the County would conduct as a means to avoid or minimize potential impacts associated with this type of routine maintenance activity.

2.4.2 ROADSIDE DITCHES AND GREEN INFRASTRUCTURE

Roadside Ditches

Roadside ditches, including V-ditches, trapezoidal and segmental ditches; collect stormwater runoff from the adjacent road surface. Unpaved and paved roadside ditches/swales are typically cleaned when debris and vegetation have reduced the capacity has been reduced by 25-30 percent. Ditch cleaning typically occurs annually during the late summer or early autumn months (August through October) to preserve drainage capacity. For unpaved ditches or swales, typical maintenance required involves vegetation removal through use of a Ditch Master and hand tools. For paved ditches, vacuum cleaning methods are conducted by hand vacuum. Mechanical cleaning methods are conducted by either ditch witch or backhoe, and manual cleaning is conducted using a shovel to remove debris, trash, or sediment. Removed material is then hauled and disposed of in an area where the removed materials will not be discharged into a water body or drainage facility. For the purposes of this EIR, it is assumed that roadside ditch/swale maintenance occurs 66 days per year.

Green Infrastructure

The County has installed a number of GI features in recent years to promote infiltration and improve water quality. Typical maintenance activities at GI sites includes trash removal, storm drain inlet and outlet cleaning, weed removal, light sediment clearing, and replanting

vegetation on an as-needed basis to maintain infiltration capacity. In addition, the County is required to implement GI consistent with the Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit for Phase I municipalities and agencies in the San Francisco Bay Area (Order R2-2015-0049), also known as the Municipal Regional Permit. Since 2009, new development and redevelopment projects that exceed certain size thresholds must incorporate pollutant source control, stormwater treatment and flow control measures to prevent impacts on water quality. Example GI projects include rain gardens, bioretention areas, vegetated swales, green roofs, and porous pavements. Maintenance of GI features constructed prior to 2015 would be covered under this program, while maintenance of GI features construction post-2015 would be covered under the Municipal Regional Permit. The County Board of Supervisors recently approved the County's GI Plan in September 2019 (County of San Mateo 2019). Sediment Removal

Sediment removal is required to ensure adequate conveyance capacity of flood control channels, culverts and other storm water infrastructure. Sediment removal occurs in both engineered channels (e.g., concrete box culverts) and natural creeks as well as in smaller ditch relief culverts and larger on-channel culverts at road crossings and trails. Sediment removal activities from channels and beneath bridges typically occur at focused localized sites that experience sediment deposition or blockages.

For the proposed program, sediment removal activities at creek and road crossings are limited to 150 feet or less per work site. The County is typically limited to working within the width of the road right-of-way (100 feet or less). For sediment removal in channels, work activities would be limited to 500 linear feet per site. The program is limited to removal of no more than 500 cubic yards of sediment from a channel site. However, the amount of sediment removed from a site is typically less than 100 cubic yards. The average annual amount of sediment removed for the proposed program would be approximately 750 cubic yards or less. For the purposes of the proposed program, the annual work limit for all sediment removed activities including culverts, crossings and channel locations, would not exceed 1,500 linear feet per year and 1,500 cubic yards total. On average, the County anticipates conducting 5 channel sediment removal projects per year and a maximum of 10 channel sediment removal projects per year.

If mechanized sediment removal is necessary at creek and road crossings, an excavator or backhoe is used from the top of bank or road. Mechanized sediment removal work generally occurs when channel conditions are dry. However, if water is present in the channel, dewatering would be conducted through use of cofferdams or a clean water bypass. For the program, dewatering would be limited to750 feet in length per site and 7,500 linear feet per year for all sediment removal projects. Removed sediment would be hauled to another County facility and stored for use for local projects. Removed sediment from urban areas is tested prior to removal and disposed of at an appropriate facility.

A vacuum truck is typically used to extract sediment that has accumulated beneath smaller bridges or within larger culverts and silt fencing, wattles, or turbidity curtains are placed across the culvert outlet or at the downstream end of a bridge to contain or filter out any sediment-laden water leaving the maintenance area. For smaller culverts, removing sediment may require hand removal. This work is necessary when culvert outfalls are blocked with debris or sediment and conveyance capacity is reduced by 30 percent or more. Sediment removal work typically occurs during the dry season.

2.4.3 CREEK BANK STABILIZATION

Creek bank stabilization activities involve the repair and stabilization of eroded or eroding banks and would take place on an as-needed basis. The number of bank stabilization projects required in any given year varies depending on weather and hydrologic conditions (i.e., there are typically more bank stabilization projects in wet years).

The County's preference is to use biotechnical streambank repair approaches over more hardened material approaches. The selection of the specific bank repair technique is based on site conditions, including consideration of slope stability, earth materials, geomorphic processes, and instream hydraulic conditions. Typical biotechnical treatments that are implemented include brush layering, brush packing, live staking, use of native materials like large woody debris to anchor a streambank, soil and grass covered revetments, or log, rootwad and biorevetments. The Manual (Appendix A) provides additional information about how such treatments are installed.

In the event that biotechnical approaches are deemed unsuitable due to site conditions (e.g., steep slope, limited right-of-way width), the County then considers hardscape engineered solutions such as riprap, concrete, shot-crete, soldier pile retaining walls, or soil nailing[1] to stabilize creek banks. If a biotechnical approach is not feasible, up to one hardscaped project would be conducted each year under the proposed program. Justification for hardscaped engineered solutions would be provided to regulatory agencies in the County's annual work plan (described in Section 2.6.3, below). Typically, hardscape engineered solutions would be installed above the ordinary high water mark and incorporate habitat features at the base of the structure, when feasible.

To the extent feasible, equipment is operated from the top of bank and work is completed during the dry summer months between June 15 and October 15 when creek flows are low or absent. When bank stabilization projects occur, banks will be recontoured to match the adjacent bank slope and returned to the pre-failed condition. If rock slope protection is used, the interstitial spaces between the rocks are typically backfilled with clean native soils or imported fill and planted with trees or vegetation.

The total work distance along streambanks is typically 25-100 feet. For the purposes of the proposed program, the total work distance would not exceed 150 feet per site. In an average hydrologic year (based on average seasonal precipitation), the County may work on up to three bank stabilization/slip-out projects in a given year; however, the total annual work distance would not exceed 750 feet (for all sites). Following a wet hydrologic year, the County may need to work on up to seven bank stabilization/slip-out projects in a given year. To provide sufficient coverage for wet hydrologic years, the total annual work distance along streambanks would not exceed 1,500 feet (for all sites). For further description about road slip-out repairs, see the discussion under "Roadway Maintenance and Repair" in Section 2.4.6 below.

[1] Soil nailing is an earth retention technique that involves using grouted tension-resisting steel elements (nails) followed by application of reinforced shotcrete facing or a flexible reinforcing mesh that holds the soil face beneath the head plates.

2.4.4 VEGETATION MANAGEMENT ACTIVITIES

Vegetation management activities conducted routinely through the proposed program include mowing, trimming and pruning, tree removal, herbicide application, burn piles, grazing, and downed tree management. The goals of routine vegetation management are to maintain the operational capacity of County flood control facilities through pruning, thinning, or removing vegetation; maintain sight distances and clearances for motorists along County roads to reduce safety hazards; reduce or eliminate invasive/exotic weeds at County facilities; maintain defensible space around County facilities to reduce fire fuel loads and fire risks and hazards; and maintain open space along County fire roads and trails. These types of vegetation management activities are conducted routinely and relatively consistently from year to year; however, the work locations may change yearly. A brief summary of how, where, and when these vegetation management activities typically occur is provided below.

Mowing

The County routinely mows ruderal vegetation that grows along County roads, trails and/or fire access roads to reduce fire and public safety hazards. DPW's Road Maintenance Division mows roadside vegetation to maintain site distances for motorists. The Parks Department also conducts mowing along County-maintained trails, fire access roads and other highly used recreational areas to control growth of non-native plants, maintain fire breaks and reduce fuel loads, and to maintain trails and other highly used recreational areas. Mowing activities occur at various times of the year, and the amount and timing depends on the amount of rain received in a given year. Under the proposed program and based on the amount of mowing typically conducted by the County, it is assumed that the maximum number of days that this activity would occur is up to 90 days per year.

Fuel Management

Managing fuel load and fire hazards is one of the top priorities of the County's Parks Department. The County Parks Department is responsible for maintaining defensible space around County facilities including County fire roads and trails, and along County Park boundaries where adjacent properties could be at risk. For the proposed program, typical fuel management activities conducted by the County include selective tree thinning and selective removal of undergrowth and secondary tree growth, and removal of non-native plants. In order to establish or maintain fuel breaks and remove ladder fuels around these facilities and areas, the defensible space would be maintained to a 100-foot wide buffer. Removal methods may involve use of mowing, herbicides, physical removal using work crews, or grazing. Where dead, decaying, or fallen trees present a fire hazard to trails and park facilities, removal occurs within a 200-foot buffer around facilities and structures. Depending on the park, fuel management activities could entail removing large trunk material, cutting back brush and ladder fuels from roadway edges, and chipping logs smaller than 6 inches diameter at breast height (DBH) and spreading the chips on-site. Larger diameter trees are typically chopped into segments and stacked alongside the fire road/trail for pick-up at a later time.

Trimming and Pruning

Trimming and pruning trees and shrubs are routine activities necessary to provide access to County facilities (e.g., roads and trails), improve visibility to inspect County facilities, reduce

the fire risk and maintain defensible space around facilities, and protect infrastructure. DPW conducts thinning and pruning to maintain the designed hydraulic capacity of flood control facilities and to maintain the safety of vehicle traffic and pedestrians. Hand tools or mechanized equipment are used. The Parks Department also conducts this work along trails and fire roads, and within 100 feet of facilities, campsites, and picnic areas where open flame is permitted to reduce the fire risk. The parks Department coordinates with California Department of Transportation (Caltrans) and Pacific Gas and Electric (PG&E) to maintain their rights-of-way with the following County Parks: Wunderlich, Huddart, Sam McDonald, and San Bruno Mountain State and County Parks. Once work is completed, trimmed matter (limbs, vines, brush, etc.) is hauled and disposed of at an off-site location. However, in areas that are within a Sudden Oak Death (SOD) zone of infestation, the Parks Department leaves chipped material on-site and does not re-use it elsewhere in the County.

Tree Removal

The County's Road Maintenance crew removes trees in the County right-of-way to maintain line of sight clearance and appropriate height clearances for vehicles and pedestrians, and to minimize risks of potential hazards to the public, including reducing the risk of fire. Tree removal may also be required for equipment access to perform repairs at culverts, bridges, bank stabilization and slip-out sites.

A tree is considered a hazard if the tree meets the "extreme" or "high" risk characteristics as defined by the International Society of Arboriculture and may include dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or property (a target) that have the potential to cause death, injury, or substantial property damage. A hazard tree may have a high likelihood to fall within the coming year (due to storm, high wind, natural decay, or other causes) and the falling of that tree could pose a direct hazard to people, roads, or other infrastructure and County facilities. The Parks Department identifies and removes hazardous trees on a continual basis and takes into consideration visitor frequency. In general, hazard trees in areas where human uses are expected to be low (e.g., in the interior portion of a forest community far away from any trails) are left as is. Hazard trees in highly used areas such as major trails, picnic areas, campgrounds, and parking lots, are assessed annually for impending hazard. As noted above, hazardous trees (dead, decaying or fallen trees) within 200 feet of park facilities and structures are considered for removal if they present a fire hazard; this buffer also applies when evaluating potential public safety hazards to park users. While the 200-foot buffer is appropriate for most County Parks and generally assumes that fallen trees have the potential to pose a safety hazard to structures within an area of three times the height of a tree as branches or tree parts can get thrown upon impact, some trees (e.g. redwoods) may exceed 100 feet in height; thus the Parks Department may survey a broader area for potentially hazardous trees in certain parks. To assess the severity of a hazardous tree, example hazard ranking criteria that are used include: high probability of failure, observed poor health, evidence of significant die-back, root damage, observed or suspected disease of pest infections, among others.

Note that due to the presence of California Oak Mortality Disease in most County Parks (such as along Crystal Springs Regional Trail), the Parks Department leaves all SOD-infested material in place to minimize the spread of trees infected with this disease.

Herbicide Application

Consistent with the County's Integrated Pest Management (IPM) Policy (Resolution No. 070851), the proposed program uses an integrated approach of chemical and mechanical methods to control weeds and other non-native plant growth, to help reduce fire hazards, and to prevent re-sprouting of removed trees along trails, roads, and on County lands. Mechanical treatments, such as mowing, are generally used along roadsides to prevent weed damage to roads, to maintain adequate site distance for drivers, to control spread of invasive species, and to minimize fire hazards. Herbicides may be used when mechanical applications are deemed ineffective at managing vegetation removal needs.

Herbicides are also used in combination with mechanical methods to control invasive plants at on County-owned parcels in Pescadero (including a closed landfill) and the Half Moon Bay Airport. Herbicides are used sparingly in open space areas within County parks and only qualified herbicide applicators with experience applying herbicides in natural settings are contracted to conduct this work with a Park representative's oversight. Herbicide use near water bodies is limited to controlling excessive growth of non-native plant species and in accordance with the buffers specified on product labels.

The types of herbicides that may be used by DPW include the following: Garlon-4™, Pendulum AquaCap™, Transline ™, Milestone™, and Alligare™. The types of herbicides that may be used on County Parks lands will vary based on targeted plant species present but may include Roundup Custom™, Roundup Promax™, or Rodeo™, Garlon 3A™, Garlon 4™, and Vastlan ™, Stalker™, Habitat™, Clearcast™, or Transline™. Note that the County is considering use of several glyphosate alternatives such as cetic acid (i.e., house vinegar), fatty acids, herbicidal soaps, essential oils (i.e., orange, clove, and thyme), as well as herbicides that have a reduced risk to human health and the environment compared to existing conventional herbicides, including glufosinate ammonium, iron HEDTA, and Weed Slayer (an organic herbicide).

The County complies with two court-ordered injunctions issued in 2006 and 2010, which were issued for the purpose of limiting herbicide use near habitats known to support California red-legged frog or 11 other special-status species. In areas of the County that provide habitat for California red-legged frog and other special-status species covered by the two injunctions, the Departments limit herbicide application to invasive plants and noxious weeds in accordance with exceptions to these injunctions (e.g., maintain a 20-foot buffer around certain aquatic habitat that provide red-legged frog habitat when applying herbicides for invasive plant control).

Burn Piles

Burn piles are collected vegetation debris that are assembled and burned as an alternative to mechanical trimming and pruning. In the County, burn piles are comprised of shrubby understory material and depending on available space, have dimensions of approximately 4 feet x 4 feet x 6 feet. The mass of each burn pile would be limited to 750 pounds/pile of woody debris. While this activity has not been conducted frequently in recent years, the Parks Department may have a need to conduct pile burning at certain County Parks such as Edgewood County Park, San Bruno Mountain State and County Park, San Pedro Valley Park, Huddart Park, Wunderlich County Park, Sam McDonald County Park, Memorial County Park,

and Pescadero Creek County Park in order to maintain fuel breaks and reduce vegetation density along park boundaries.

If burn piles are needed, maintenance crews would begin creating piles at the end of fire season (generally between October to the beginning of January). In accordance with the Bay Area Air Quality Management District's (BAAQMD's) open burning regulation (Regulation 5), the material would then be left to dry out for at least 60 days before burning material that is 3 inches in diameter and smaller. Piles are typically burned before mid-June before peak wildfire season. Piles are extinguished at the end of each day. For the purposes of this program, burn piles would be limited to 30 piles per acre and may be used for fuel break maintenance on up to 20 acres per year. The County would coordinate burn pile activities with CAL FIRE and obtain appropriate burn permits from the Bay Area Air Quality Management District.

Grazing

Livestock grazing is conducted to control growth of herbaceous weeds, brush, and non-native plants; and for fuel management and fire risk reduction purposes on County park lands. More specifically, DPW conducts annual goat grazing at closed landfills including the Pescadero Landfill and Half Moon Bay Landfill. Grazing entails use of livestock to provide non-targeted weed control in a particular area. Before grazing commences, protective fencing is installed and then small herds are put on parcels for a set amount of time determined by range ecologists. Grazing animals are also excluded from channels and other water sources. This activity is typically done in late spring or early summer.

Downed Tree Management

The County removes fallen trees in urban or high-use park settings if the fallen tree presents a safety or hazard risk. The County may also saw or chip the downed tree in place if the tree is deemed as a potential hazard and located in a low-use rangeland or watershed setting. If the fallen tree does not present a safety or hazard risk, the County may leave it in place.

When downed trees occur along stream courses, the County evaluates the tree for its potential to cause or increase erosion, flooding, bank failure, or negatively impact a facility such as a bridge or culvert. If erosion and flooding risks are unlikely, the County seeks opportunities to maintain the downed tree as a habitat feature along the stream. The County retains a biologist or arborist knowledgeable of channel conditions when considering whether a downed tree may be preserved in place, repositioned in a channel, or cut into smaller pieces. In the event that a downed tree cannot be retained on-site, the downed tree may be removed and re-used elsewhere in the County. To the extent feasible, redwood and Douglas-fir trees fallen from County property are protected and re-used in bank stabilization and/or habitat enhancement projects.

Invasive Plant Removal

The County removes invasive plants on properties managed by DPW and the Parks Department to control the spread of invasive plants and to reduce fire hazards. Methods used to remove invasive plants include a combination of hand removal, mechanical methods, and herbicide application. As described above, grazing may also be used to control non-native growth on Park lands.

2.4.5 ROAD AND TRAIL MAINTENANCE ACTIVITIES

Roadway Maintenance and Repair

DPW is responsible for maintaining both paved and unpaved road surfaces in unincorporated San Mateo County. Primary paved road maintenance activities include repairing potholes and roadway bases, repaving, replenishing gravel, extending pavement edges, paving graveled shoulders, sealing cracks and chips and slurry, resurfacing, and adding pavement marking and traffic control features. Other paved road maintenance activities include street sweeping to remove soil, organic material, dust and debris from County roads; and maintaining shoulders within the County's right-of-way to provide a smooth transition from the edge of pavement to the shoulder surface, where feasible. For the purposes of this EIR, it is assumed that resurfacing would occur 128 days per year and reconstruction activities may occur approximately 15 days in a given year. Primary unpaved road maintenance activities involve re-grading the road to its existing grade or original cut, repair of rolling dips, filling ruts, relocating road surface materials that have moved due to erosion, re-establishing turn around areas for emergency vehicles, and repairing slip-outs/slides.

Slip-out/slide repairs along County roads are typically larger maintenance projects. For clarification, slope failures on the cut slope side of a roadway are referred to as "slides," whereas slope failures on the fill side are referred to as "slip-outs." These repairs are performed on an as-needed basis to prevent additional failure of supporting soils or structures, and to reduce the potential hazard of falling debris. The possibility of roadway slip-outs and landslides increases during and after the rainy season when soils are saturated. Thus, the number of slip-out and slide repairs in a given year varies depending on weather conditions. Slip-out/slide repairs have been commonly needed in areas of the County where soils underlying roadways are already unstable and erosive and where roadways are located in steep, narrow canyons where the right-of-way width is limited. The cause for a particular slope failure depends on site-specific details like soil type, hydrologic and drainage conditions (e.g., presence of culverts) which may contribute to slope instability, slope steepness, and a prior history of mass movement along the hillslope. Before initiating repair work, the County typically retains a qualified civil engineer to assess the slope conditions supporting a particular road. Similar to evaluating creek bank stabilization causes and issues; the County evaluates the cause of the instability and first aims to use earthen and biotechnical solutions but depending on the severity of the slip-out/slide, construction of retaining wall systems (e.g., soldier pile walls), installation of riprap, concrete, or shot-crete, or slope soil nailing are sometimes necessary.

Unpaved roads are inspected at the end of the rainy season and any hazardous conditions noted during these inspections are scheduled for repair prior to the next rainy season. All roadway maintenance activities are conducted to ensure a safe roadway surface for motorists and to prevent further roadway deterioration or failure. To the extent feasible, maintenance of roads would occur during the dry season, typically between April and October.

Trail Maintenance and Repair

Trail maintenance and repair activities in County parks include repairing trail surfaces (tread); re-grading work on worn down trails due to heavy use; repairing water bars, rolling dips, and drainage ditches to prevent or reduce erosion and downstream sedimentation issues in nearby channels and creeks; repairing and installing signage; removing graffiti; and

repairing other trail-related structures. In problematic areas, particularly those on steep slopes and switchbacks, the County may need to construct new rolling dips. These consist of rolls and out-sloped dips (typically every 5-15 feet) that create small drainage divides and segments along a trail. In some instances, due to severe erosion or the presence of a landslide, some trail segments may require rerouting. Refer to the maps in Appendix C of the Manual (Appendix A of this DEIR) to see where trail maintenance activities occur within County parks.

Trail repairs are prioritized and completed based on the periodic inventory conducted during spring and summer by maintenance staff. During these inventories, maintenance crews make note of trail conditions (e.g., drainage and surface conditions) and potential need for other maintenance activities, such as vegetation clearing. Under the proposed program, the Parks Department would conduct up to 25 unpaved trail projects per year.

2.4.6 MARINA MAINTENANCE ACTIVITIES

Other minor maintenance activities conducted by the Parks Department include routine maintenance at the Coyote Point Marina, which is located about six miles southeast of the San Francisco International Airport. Routine maintenance activities at this marina involve inspections of the pump out facility, dock repairs, water line inspections, and boat launch ramp maintenance. The Parks Department is also responsible for inspecting the channel entrance pilings, day markers, entrance lights and range lights. Other minor maintenance includes periodic inspection and replacement of wood pilings, removing hazardous logs and driftwood, and re-rocking the berm where rocks have fallen. The County also measures the depth of the channel entrance/breakwater at the marina to determine the need for future dredging work. Note that dredging activities would not occur under the proposed program.

2.5 ACTIVITIES NOT COVERED

The proposed program would not include the following activities:

- Maintenance projects that would alter the designed flood conveyance capacity of an existing engineered channel.
- Large construction projects and capital improvement projects (CIPs)
- Emergency maintenance activities.

A situation is considered an "emergency" if it is a sudden, unexpected occurrence involving a clear and imminent danger that demands immediate action to prevent or mitigate loss of or damage to life, health, property, or essential public services (Public Resources Code Section 21060.3). An emergency situation could involve activities that would otherwise be considered routine maintenance activity as described in this Manual but may need to occur at an unplanned time.

2.6 IMPLEMENTATION AND OVERSIGHT

2.6.1 ANNUAL WORK CYCLE

Proposed maintenance activities would be conducted on an annual cycle; the timing for implementing activities would vary depending on whether they are non-ground-disturbing activities or ground-disturbing activities. Maintenance timing would also depend on site location.

Non-ground-disturbing Activities

Non-ground-disturbing maintenance activities that would be conducted in upland areas such as mowing, grazing, and vegetation trimming along County roads, trails, and around County Parks Department facilities would generally occur between spring and summer months. Limited herbicide application in upland areas occur at various times of the year and depend on the targeted invasive plant. Other minor maintenance activities such as removing trash and debris from culverts, minor bridge and trail maintenance in upland areas may occur year-round. For vegetation management and fire reduction activities, typically a reconnaissance evaluation would be conducted annually in the winter months. Vegetation thinning and removal of dead branches or understory are best conducted in spring, once the primary wet months are over and before the drier conditions in the summer, when the maintenance activities themselves can be a source of ignition.

Ground-disturbing Activities

For maintenance activities that involve ground disturbance near wetlands or other jurisdictional waters, such as sediment removal from creeks/channels, culvert replacement, and bank stabilization or at some slip-out repair locations; the County would conduct a maintenance evaluation at each facility during the winter season. For site assessments at sites where a facility resource characterization sheet has been developed, those characterization sheets (provided in Appendix A of this DEIR) will be referenced in the field, reviewed for accuracy, and updated as appropriate. New facility characterization sheets summarizing biological resources conditions, water quality, and maintenance needs will be prepared for those sites in which no characterization sheet has been developed.

The history of past maintenance activities and specific resource conditions at individual facilities would be reviewed as maintenance tasks are identified and prioritized. During the later winter season, an annual maintenance work plan would be developed for ground-disturbing activities based on the assessment and prioritization process.

The number of maintenance activities prioritized for the annual work plan would be dependent on factors such as the climatic and hydrologic conditions in the preceding years. Projects marked as low priority and not included in the current year's work plan will be noted for inspection and reassessment during the next annual work cycle. As appropriate, regulatory agencies would be notified of the planned ground-disturbing maintenance activities in April. Ground-disturbing maintenance work would be implemented between June 15 and October 15.

For some ground-disturbing activities, potential constraints would be identified that might complicate maintenance activities. For example, narrow access, the presence of infrastructure such as pipelines or road crossings, the presence of threatened or endangered species, and structural facility issues could all influence the maintenance approach. The annual maintenance work plan for ground-disturbing activities would identify specific treatment approaches, conceptual plans and/or design plans for each treatment that would be implemented. A summary description of design treatments selected, construction equipment to be used, access and staging, and discussion of why the treatment was selected would be provided. Details including the linear feet of channel to be disturbed, linear feet of the replacement culvert, length of the bank repair, and volume of sediment to be removed will be provided. In addition, the acres of waters of the U.S. and waters of the state will be described.

Following identification of the treatment approach for ground-disturbing maintenance activities, the County's biologist would determine the tiering category for each maintenance site according to the following definitions. This tiering approach was developed based on feedback received by regulatory agencies for addressing potential effects on federally listed species and habitats based on resource sensitivity at the maintenance site.

- **Tier 1 (No Impact)** – If the biologist determines that maintenance activities would occur in creek reaches inaccessible to federally listed fish or, for federally listed terrestrial species other than birds, in areas where no suitable breeding habitat is present and there is no connectivity between the site and known or potential breeding habitat (so that non-breeding individuals can also be presumed to be absent). Because foraging or roosting birds could easily fly away before being impacted by maintenance activities, the implementation of project activities in non-breeding habitat for federally listed bird species is not expected to result in impacts on individuals that rise to the level of "take".

- **Tier 2 (Low Impact)** – If the biologist determines that one or more federally listed species are known to occur or could possibly occur on-site either because (1) suitable breeding habitat is present, or (2) for terrestrial species and fish, suitable non-breeding habitat is present and there is connectivity between the maintenance site and suitable breeding habitat; but that implementation of BMPs (e.g., pre-construction surveys, exclusion of individuals from the site, and/or implementation of non-disturbance buffers around active nests of federally listed birds) would avoid direct impacts on individuals. Depending on the sensitivity of the work area and the likelihood that individuals may move into the work area after the pre-construction surveys are completed, some of these activities may require an on-site biological monitor. For Tier 2 activities, "take" in the form of permanent loss of habitat should not occur, and therefore, no compensatory habitat mitigation would be necessary for Tier 2 activities.

- **Tier 3 (Moderate/High Impact)** – If the biologist determines that (1) federally listed species may occur on site either because suitable breeding habitat is present or suitable non-breeding habitat with connectivity between the maintenance site and suitable breeding habitat is present; and (2) that federally listed species cannot be effectively excluded from the work area, preconstruction surveys could not definitively determine the presence or absence of the species, and/or "take" in the form of permanent loss of habitat cannot be avoided. An example Tier 3 project

might include culvert replacement activities on the Coastside streams known for salmonid habitat or culvert maintenance activities. For these types of activities, the County anticipates that BMPs, avoidance measures and on-site biologist would be needed to minimize construction-related effects. Compensatory mitigation may be needed to offset permanent effects on sensitive species and/or habitat.

These tiering categories would help guide the County in determining appropriate impact avoidance measures and activity-specific BMPs listed at the end of this chapter in Tables 2-3 through 2-5. Note that all projects (both non-ground-disturbing activities and ground-disturbing projects) would utilize appropriate program-wide BMPs for impact avoidance and minimization as identified below. The tiering categories would also assist the County in determining which maintenance activities will require an on-site biologist during construction and which will require compensatory mitigation. This tiering approach will guide development of the mitigation plan described below in Section 2.7.3.

The County would oversee the proposed program throughout all steps of the above-described work cycle. Continuity in oversight and attention will enable the program to run effectively. A designated staff person from the County would serve as the Maintenance Program manager. The Maintenance Program manager's primary responsibility would be to supervise and guide the proposed program. A key responsibility for the maintenance manager would be to provide communication and coordination between the two County departments and the relevant regulatory agencies throughout all steps of the work cycle.

2.6.2 MAINTENANCE CREW, WORK DURATIONS, AND EQUIPMENT

The typical size of a maintenance crew varies between four and eight personnel but no more than ten personnel. For vegetation management activities, the crew size is typically limited to four personnel. For larger maintenance projects such as bank stabilization, slip-out/slide repair, culvert replacement or bridge maintenance; the maintenance crew may include up to eight personnel.

Vegetation management activities would be temporary at any given location as maintenance crews are expected to cover a large area in a workday. Most proposed maintenance activities would be completed within a couple days but some larger-scale maintenance activities (e.g. culvert repair/replacements, bank stabilization, road slip-out/slide repairs, sediment removal in channels) may be more involved and require a few weeks. Maintenance activities would generally be conducted during daytime hours (between 8:00 a.m. and 5:30 p.m.) on weekdays.

The specific pieces of equipment used for the proposed program maintenance activities would vary depending on the facility and type of maintenance activity required. Sediment removal activities may require use of the following: an excavator, bulldozer, tractor, Vac-Con trucks, dump trucks, and hand tools. For culvert repair and replacement activities, typical equipment includes compactors, dump trucks, and loaders.

For culvert replacement activities that involve excavation, equipment may involve using an excavator. During the excavation process, an excavator is used to remove an existing culvert. If trenchless solutions are used, culvert replacement utilizes a spincaster to apply thin coats of cementitious materials to the inside of failing culverts. This method involves less ground

disturbance and creates a new waterproof pipe that adheres to the original pipe and extends the life of existing pipes without the need for trenching/excavation.

For sediment removal activities at smaller channel crossings (i.e., pipes and box culverts), sediment is flushed using a Vac-Con during the excavation process to remove accumulated sediment.

For bank stabilization and road slip-out/slide repairs, equipment typically used include extending arm excavators, small bulldozers, front-end loaders, and dump trucks. The staging of equipment would generally occur from the top of bank at creek bank stabilization sites and from adjacent road shoulders or the road itself at slip-out/slide repair sites. To the extent feasible, access roads and other previously disturbed areas are used for the staging of soil and bank stabilization materials.

For mowing activities along County roads, trails and other recreational areas, equipment used include flail and boom mowers where space is available. Where space is limited, hand-held tools (e.g., weed-whackers) are used. Weed-whackers are also used in rocky areas and areas with sensitive habitat. In areas where the ground surface is uneven, mowers are set to a height of not less than 4 inches above the highest surface.

Fuel management activities involve a range of construction equipment and depend on the activity type. Fuel management activities include selective tree thinning and selective removal of undergrowth and secondary trees. This work is conducted by work crews using hand tools such as chainsaws, machetes and brush cutters.

2.6.3 Annual Reporting and Agency Notification

By April 30 of each year, the County would notify the relevant regulatory agencies (i.e., those agencies with jurisdictional authority or oversight) of the year's planned maintenance projects. The relevant regulatory agencies would be provided with information describing proposed maintenance activities, locations, natural resource conditions, and any other key resource issues. The notification package would describe which ground-disturbing maintenance activities would result in impacts on temporary and permanent impacts on wetlands or waters of the U.S. and state. It would also describe in detail the County's proposal for providing compensatory mitigation for those impacts and may include one or more options described in Section 2.7.3 below. If requested, the County may host a tour of the identified maintenance sites. Following regulatory review and coordination, ground-disturbing projects will be implemented between June 15 and October 15, with summary reporting activities occurring in winter (before January 31).

2.7 Impact Avoidance and Minimization Measures and Compensatory Mitigation

2.7.1 Maintenance Triggers

Maintenance activities are conducted only when determined to be necessary by the County. On an annual basis, the County would conduct site inspections of their facilities to evaluate maintenance needs. The triggers below would guide County staff during these inspections to

identify which sites have exceeded the thresholds described in the maintenance triggers and may need maintenance. The County would then prioritize activities according to the degree in which the identified site exceeds the maintenance triggers. This section briefly describes observed conditions that would trigger the need for maintenance work. The following discussion is organized by facility type.

Maintenance Triggers for Culverts, Storm Drainage, Channels and Bridges

The following maintenance criteria are used to evaluate and determine when maintenance actions are required at County culverts, bridges, and channels. Maintenance of these facilities are prioritized particularly if the degraded facility is potentially contributing to sedimentation and erosion issues in channels impaired by sediment or other water pollutants in the County.

- **Repair or Replacement of Existing Culvert**: This work is conducted when an existing culvert has been crushed or otherwise damaged and cannot operate properly; is at risk of future failure or deterioration (e.g., bottom of a CMP culvert is beginning to rust); is clogged with debris, sediment and/or vegetation and/or cannot provide adequate conveyance capacity; or has been dislodged, moved, or positioned in such a way that the culvert cannot function properly and/or in relation to conveyance. A culvert repair or replacement project may be prioritized based on factors such as whether the damaged culvert is causing other adverse effects like roadway flooding (due to a clogged culvert), increased erosion downstream of a culvert, undermining a streambank or causing other erosion, or contributing large amounts of sediment to nearby creeks.

- **Clearing Culverts and other Storm Drainage Facilities**: This work is necessary when culvert inlets, culvert outfalls, flap gates, diversion structures, storm drains, manholes, catch basins or other storm drainage facilities are noticeably clogged with debris and at least 30 percent of their conveyance area is impacted or reduced.

- **Trash Capture and Catch Basin Devices:** Trash rack clearing is necessary when a substantial volume of trash has accumulated such that flows are backing up from the rack and drainage and conveyance is impeded. Trash capture devices should be inspected at least once per year and in high trash generation areas, such devices should be inspected at least two times per year. If any such device is plugged, has a blinded screen, or is greater than 50 percent full of trash, the maintenance frequency should be increased so that the device is neither plugged nor half full of trash at the next maintenance event.

  The connector pipe screens or insert filters of catch basins should be cleaned when the following conditions have been observed during inspections: storm drain floods during storm events; small device screen is plugged or blinded with leaves, plastic bags or other debris which likely causes overflow or bypass; small device screen is greater than 50 percent full of trash; or flows are observed bypassing small device.

- **Pump Station Inspections:** Pump stations are routinely inspected to ensure they are in operational condition, particularly prior to forecasted periods of rain. Repairs and modifications are conducted as-needed.

- **Channel Maintenance**:
  - **Concrete Repair:** Concrete repair work is only necessary when cracks are observed in the concrete bed and banks of flood control channels.
  - **Tide Gate Servicing:** Debris clearing occurs at these facilities when debris accumulation is observed behind a tide gate, such that the tide gate cannot operate properly and its ability to convey flows freely is impeded. The flaps on tide gates are also replaced on an as-needed basis.
  - **Repair of Existing Rock Slope Protection:** This work is necessary where rocks have fallen or shifted require repair or replacement to ensure rock slope protection is operating as intended (e.g. to prevent or minimize bank erosion).
  - **Floodwall and Levee Maintenance:** Floodwalls and levees are visually inspected on a regular basis to ensure their structural integrity is maintained. Repairs, graffiti removal, and vegetation removal are conducted as needed at floodwalls. Levee maintenance is necessary when open burrows, fallen rocks, cracks, or slip-outs have damaged the structural integrity of the levee and there is a chance of levee failure or erosion.
  - **Trash Removal:** Trash removal is generally conducted using a Vac-Con or hand tools. Spot removal of large heavy items such as shopping carts, mattresses, TVs, or tires occurs on an as-needed basis when such items are found in the channel.
- **Bridge Maintenance**: In general, bridge maintenance would be conducted in accordance with Caltrans' *Preventative Maintenance Program Guidelines for Local Agencies*. Minor bridge maintenance activities are necessary when the protective paint coating has chipped off or cracks on the exterior have noticeably worsened. Erosion protection improvements at the base of a bridge are necessary when scour damage begins to undermine the structural stability of bridge wingwalls and/or abutments. Maintenance along bridge decks is necessary when damage or cracks on the surface have magnified to the degree that the damaged bridge could represent a public safety hazard. With respect to County Parks' bridges (most of which are pedestrian bridges), repair or replacement of wood railings or surface boards may be necessary if damage is evident. Abutment repair may also be required if damage is evident. Debris clearing is also necessary when the capacity beneath the bridge has been reduced by 30 percent or more due to debris build-up.
- **Sediment Removal from Culverts**: This work is necessary when culvert outfalls are blocked with debris or sediment and conveyance capacity is reduced by 30 percent or more.
- **Sediment Removal from Channels and Bridges**: This work is necessary when sediment or debris has reduced channel capacity to the extent that the likelihood of overbank is significantly increased and flooding could damage property or substantially threaten public safety. This work is also necessary when sediment or debris deposits are evidently causing scour erosion of streambanks supporting bridges or other public facilities like roads.

- **Bank Stabilization:** This work is necessary when bank failure has occurred and the bank must be repaired to re-establish the banks of a creek or flood control channel, protect the channel's flood conveyance capacity, and prevent additional sediment input to the channel. This work is also necessary when bank erosion or failure poses a threat to existing infrastructure (e.g., utilities, roads). This work is necessary if persistent bank erosion is occurring, leading to excess sediment loading and/or damage to riparian vegetation.

- **Downed Tree Management:** Management of downed trees may be appropriate if it has been determined that the downed tree has potential to increase erosion, flooding, bank failure, or negative impacts to public infrastructure (e.g., bridges or culverts). If such risks are unlikely, the County will explore options for preserving and/or repositioning the tree along the channel. If erosion and/or flooding risks are likely to occur, the County will consider removing or reusing the tree elsewhere in the County.

Maintenance Triggers for Roads, Roadside Ditches, Swales and Green Infrastructures

The following maintenance criteria are applied to evaluate and determine when maintenance actions are required at County roads, roadside ditches and swales:

- **Paved Road Surface Maintenance Activities:** Paved road maintenance activities (e.g., pothole repairs) occur shortly after the road safety hazard occurs and on a routine basis for preventative maintenance purposes to prevent accidents, vehicle damage and other traffic safety hazards. Minor road repairs that entail patching cracks and resurfacing are prioritized based on severity of traffic safety hazards, level of road use, and typically conducted outside of the rainy season (between April and October).

- **Unpaved Road Surface Maintenance Activities:** This work is necessary when a road surface has deteriorated or failed due to erosion or stormwater flows, has contributed sediment and subsequent adverse water quality and/or hydrology impacts, or led to erosion nearby. These activities are also prioritized by severity of traffic safety hazards and level of use.

- **Roadway Slip-out/Slide Repairs**: Slide repair is necessary when slope failures have occurred on the cut slope side of a roadway; a slip-out repair is necessary when slope failure has occurred on the fill side. This work is necessary when the roadway slip-out/slide poses a threat to existing roads or other facilities like utilities, or public safety. This work is necessary when the roadway slip-out/slide has contributed sediment to nearby drainage, channel, or other waterbody.

- **Vegetation and Fuel Management Along Roads:** Mowing, trimming and pruning of vegetation along County roads is necessary to maintain appropriate line of sight clearance (usually 4 feet at an intersection), to maintain a 14-foot height clearance for vehicles, and to maintain a 7-foot height clearance for pedestrians. This work is necessary when overhanging limbs or trees pose a public safety hazard for motorists.

- **Cleaning and Repair at Unpaved Roadside Ditches and Swales**: Roadside ditch/swale cleaning is necessary when debris and vegetation have reduced the capacity of ditches/swales by 25-30 percent. Filling of ditches/swales is necessary where the ditches have eroded to depths below the existing grade.

- **Paved Ditch Cleaning**: This work is necessary when drainage capacity has been substantially reduced, by at least 30 percent.

- **Sediment and Debris Clearing and Vegetation Management of Green Infrastructure**: Trash and weed removal occurs during annual inspections and on as-needed basis. Light sediment clearing occurs when capacity of the LID facility or GI site has been reduced; facility or structure is not functioning as designed, or as otherwise specified in site-specific operation and maintenance guidance documents. For bioretention facilities, maintenance typically occurs when there is greater than 2 inches of accumulated sediment, reduced infiltration, clogged inlet or outlet, or when sediment is covering vegetation. As described in Section 2.4.2, the proposed program only covers maintenance of GI features installed prior to 2015 using Proposition 84 grant funds from the SWRCB.

Maintenance Triggers for County Landfills and County Airports

The following maintenance criteria are applied to evaluate and determine when maintenance actions are required at closed landfills (e.g., the Pescadero Landfill and Half Moon Bay Landfill) and County-owned airports (e.g., Half Moon Bay Airport and San Carlos Airport):

- **Vegetation Management at Closed Landfills**: Livestock grazing is conducted at the Pescadero Landfill and Half Moon Bay Landfill, both of which are closed, on an annual basis to control growth of non-targeted weeds. Herbicide application is used at the Pescadero Landfill and adjacent County-owned parcels to control invasives (i.e., jubata grass growth).
- **Vegetation Management at County Airports**: Jubata grass growth is managed around the Half Moon Bay Airport runways through a combination of mechanical methods and herbicide application. Limited herbicide application and mechanical removal of invasive weeds is also conducted at the San Carlos Airport. The County aims to control and stop seedling growth as a preventative measure to avoid obstructing of lighting or signage at these airports. Additionally, if an airplane deviates from the paved runway, this vegetation needs to be maintained in order to allow safe landing.

Maintenance Triggers for Parks and Trails/Fire Access Roads

The following maintenance criteria are applied to evaluate and determine when maintenance actions are required at County Parks and trails/fire access roads:

- **Trail/Fire Access Road Tread Repair:** This work is necessary when trail/road tread has worn down and ruts are evident, thus requiring addition of the proper type of soil and/or re-compaction. The need for trail tread repair work is determined during periodic inventories that are conducted.

- **Other Trail Maintenance and Repairs**: Repair of signs and other structures is conducted when damaged.

- **Vegetation and Fuel Management and Maintenance of Fire Breaks Along Trails/Fire Access Roads and other Recreational Facilities**: The County will inspect trails, campgrounds, picnic areas, and other recreational amenities annually and, based on the assessment, will develop a fuel management work plan to be implemented during the following work season. Vegetation thinning or pruning along trails is typically necessary when shrubs or trees are overhanging the trail or campground. In order to establish or maintain fuel breaks and remove ladder fuels along trails, around facilities, or along park boundaries where adjacent private properties could be at risk, the defensible space should be maintained to a 100-foot wide buffer. Where dead, decaying, or fallen trees present a hazard to trails and park facilities, removal should occur within 200 feet of park facilities. Mowing is needed when overgrown weeds and other grasses encroach the trail or other recreational facility. Tree removal is necessary if a particular tree has created a public safety hazard along or near County maintained facilities and the situation cannot be fixed by limbing or pruning.

- **Burn Piles**: Burn piling may need to be conducted by County Parks to maintain fuel breaks and reduce vegetation density along some park boundaries (e.g. Edgewood County Park). This method may be more appropriate over mechanical or hand removal methods for efficiency purposes.

- **Herbicide Application within County Parks:** While herbicide application is used in limited amounts for controlling non-native plants in County Parks, in some cases, herbicide application is more appropriate over mechanical or hand removal methods due to access or efficiency purposes.

Maintenance Triggers for Coyote Point Marina Maintenance Activities

The following maintenance criteria are applied to evaluate and determine when maintenance actions are required at Coyote Point Marina:

Pump Out Facility Maintenance: Preventative maintenance inspections of the pump out facility occur on an annual basis to ensure capacity for continued use in removing sewage from boats. Preventative maintenance typically includes checking the belt tension, greasing the motor grease fittings, checking pipes for leakage, changing the pump hose every 1-2 years, changing the separator band and abutment every 1-2 years, and changing the pump oil every three years.

Dock Maintenance: Routine dock maintenance only occurs when the cleats, bumper striping, gussets and covers along the dock perimeters are damaged and need replacement. Maintenance may be conducted if Parks staff observe rusty screws, bolts, rotted plywood, and/or gaps in the concrete blocks comprising the docks which could represent a public safety hazard.

Water Lines: Upon periodic inspections of dock water lines, the County repairs these lines if a malfunction is observed.

Boat Launch Ramp: Maintenance at boat launches are only conducted if damaged floats, cleats and bumper striping are observed. Large debris present in the launch ramp lanes is also removed for safety purposes.

Channel Entrance and Breakwater Maintenance: Upon inspection, entrance pilings are repaired with plastic pile wrap when deterioration is observed and light bulbs of entrance lights are replaced once they have reached the end of their useful life. Hazardous logs and driftwood are removed if observed in the channel entrance, and rocking on the berms are repaired with new rocks where rocks have fallen.

2.7.2 WORK LIMITS AND BEST MANAGEMENT PRACTICES

In effort to minimize impacts resulting from maintenance activities, the proposed program includes the following work length and size limits:

- Culvert repair/replacement work is limited to 60-inch size diameter culverts and smaller. Each site would be limited to 150 linear feet. The annual limit for all culvert repair/replacement activities is 1,500 linear feet. Work activities on non-fish bearing streams would be limited to 150 feet in length per site and 1,500 linear feet for all such culvert repair/replacement projects in a year. Culvert repair and replacement activities on fish-bearing streams are limited to 100 feet per site and one such project per year.

- Channel maintenance is limited to:

  - Minor patching and repair of concrete channel walls and beds.

  - In-kind repair of existing channel rock slope protection (replacing the immediately missing or damaged rocks).

  - Maintaining tide gates by clearing debris blockages and replacing the flaps on tide gates where necessary.

  - Floodwall and levee maintenance would be minor (e.g., graffiti removal) and conducted to return floodwalls to its as-built design. Levee maintenance would be limited to minor repair of existing levees to maintain structure integrity (i.e., filling in burrows, replacing fallen rocks, repairing cracks, and repairing slip-outs).

- Bridge maintenance and repair activities would occur within the bridge footprint or immediately adjacent area, within 25 feet upstream or 25 feet downstream of the bridge. Total annual work limits are 500 linear feet within a creek below, upstream, or downstream of a bridge.

- Roadside and ditch clearing would be limited to minor debris and sediment removal in order to restore original capacity of ditches and swales.

- Maintenance of GI and LID sites would be limited to minor maintenance activities including trash, debris and sediment clearing; cleaning storm drainage inlets and outlets; and as-needed repairs after large storms.

- Sediment removal activities at culverts and crossings are limited to 150 feet or less per site.

- Sediment removal activities in channels are limited to 500 feet in length or less and no more than 500 cubic yards of sediment per site.

- The annual limit for all sediment removal activities is 1,500 linear feet for all sediment removal projects including at culvert, crossings, or in channel locations. The average annual amount of sediment removed for the proposed program would be approximately 750 cubic yards or less.

- For creek bank stabilization / slip-out and slide repairs, the total work distance would not exceed 150 feet per site. For average hydrologic year conditions, the total annual work distance will not exceed 750 feet (for all sites). During a wet hydrologic year, the total work distance along streambanks will not exceed 1,500 feet (for all sites). Following a wet hydrologic year or period, the County may work on up to seven creek bank stabilization/slip-out projects in a given year. If biotechnical approaches are determined unsuitable or have previously failed at a given site, the County may work on only up to one hardscaped project per year. In such an instance, the County will demonstrate that the chosen method is the least impacting to a waterbody.

- Vegetation management activities are generally limited to the County's right of way along County roads, along County trails/fire access roads, and within 100 feet of County Parks Department facilities (such as campsites and picnic areas)**.** Herbicide use is limited to spot spraying in certain areas for invasive weed control purposes. Herbicides are not used in or adjacent to any fish-bearing stream, lake, pond or other water bodies known to support California red-legged frog. If used in areas that provide habitat for California red-legged frog and other special-status species, the County maintains a 20-foot buffer around aquatic habitat in compliance with two Court-ordered injunctions and uses formulations for use near water.

- **Burn Piles.** This work primarily occurs along County Park boundaries. The mass of each burn pile would be limited to 750 pounds per pile of woody debris and would be limited to 200 burn piles per acre and 25 acres per year for fuel break maintenance.

- Downed tree management occurs when a downed tree is significantly decreasing flood conveyance capacity or deflecting streamflow causing bank erosion. The County considers these factors when determining whether a downed tree should be preserved, repositioned, or removed from the site and/or reused off-site.

- Marina maintenance activities would be limited to minor repair and debris removal activities and would not include dredging.

The County implements best management practices (BMPs), operational or procedural practices, and which are implemented to protect natural resources. BMPs presented at the end of this chapter in **Table 2-3** are also included in the Manual (Appendix A). These measures are implemented to protect and enhance existing habitat, protect maintenance workers and the general public from equipment hazards.

2.7.3 PROGRAM MITIGATION

In addition to impact avoidance and minimization measures, compensatory mitigation may be required to offset the proposed program's residual impacts on wetlands, waters, riparian resources, and federally and state listed species.

On-Site Mitigation Options

For routine maintenance activities located outside of tidal wetland/other waters habitat within the U.S. Army Corps of Engineers (USACE) jurisdiction, the preferred mitigation approach is on-site mitigation. The general on-site mitigation approach is to restore the type of habitat that is impacted by maintenance activities in the same project vicinity or stream reach where the disturbance has occurred. For example, for creek bank stabilization projects, the County would seek to implement biotechnical solutions, as conditions allow, to avoid or minimize the potential hardening of creek banks. By implementing biotechnical solutions such as vegetated rock slope protection or vegetated soil lifts, such projects may be self-mitigating.

Off-Site Mitigation Options

Off-site mitigation can provide opportunities for in-kind mitigation that aligns with the functions and values of natural resources that are potentially impacted by the maintenance program but is done at a different location than where the maintenance occurs. The general approach is to conduct off-site mitigation within the same watershed or general region as where the maintenance activities occur. This type of mitigation is similar to the on-site option in that the focus is to provide in-kind habitat enhancement or restoration, stream function improvement, water quality benefits, or overall watershed health improvements that offset maintenance impacts or reduce the need for maintenance. Several off-site mitigation options are identified in the Maintenance Manual (Appendix A), including future restoration efforts at the San Vicente Creek Enhancement Project, future projects within Pescadero Creek Park, invasive plant and tree removal on Park lands, gully repair and large woody debris implementation projects in the Pescadero-Butano Creek watershed, invasive plant removal at Quarry Park in Half Moon Bay, creek restoration in Junipero Serra County Park, and removal of concrete from El Zanjon Creek.

Conservation Easements and Deed Restrictions

Establishing conservation easements or deed restrictions is another option for providing off-site mitigation. For example, the County is considering expansion of an existing conservation area on adjacent County-owned land that was established to provide mitigation for impacts to California red-legged frog and San Francisco garter snake from the County's Butano Creek Sediment Removal Project. This particular conservation management area is 0.52 acre large and located on County-owned land to the south of Pescadero Creek Road between the County's corporation yard and land formerly used as a County landfill. For the proposed program, the County may expand this conservation area by as much as 55 acres. By establishing a restricted covenant deed on this land, the conservation area provides opportunities for the County to "bank" mitigation for these species by managing larger patches of habitat than are needed as mitigation for any particular year's activities and debiting mitigation requirements on an annual basis from the total mitigation provided.

Partner with Local Watershed Organizations

An additional opportunity to provide mitigation for routine maintenance activities could occur through partnering with local San Mateo County based watershed, stewardship, or non-profit organizations that lead or coordinate habitat restoration or watershed improvement projects. The County can assist such organizations through funding projects that improve water quality and restore habitats and ecosystem projects in San Mateo County. As an example, the County has successfully partnered with the San Mateo Resource Conservation District (RCD) on several past projects including the Butano Creek Channel Reconnection and Resilience Project, which involves dredging roughly 8,000 feet of the historic Butano Creek channel (45,000 cy of sediment) and re-using dredged materials to fill historic man-made pits in effort to restore Pescadero Marsh Natural Preserve. This particular project will not only reduce flooding of Pescadero Creek Road but is also expected to improve fish passage and habitat for protected species including coho salmon, steelhead, California red-legged frog, and San Francisco garter snake. The County may also be able to support the RCD on other watershed programs such as their Rural Roads Program, which was initiated to reduce excessive sedimentation from roads. In so doing, the County can provide locally based mitigation to offset impacts associated with routine maintenance activities.

Mitigation Banks

Another suitable option to mitigate the proposed program's impacts on wetlands and waters of the U.S. is to purchase mitigation credits from the San Francisco Bay Wetland Mitigation Bank. Depending on the Program's potential impacts on specific special-status species, the County may also purchase compensatory credits from other mitigation banks that provide additional types of habitat that serve San Mateo County including Sparling Ranch Conservation Bank, Mountain House Conservation Bank, North Bay Highlands Conservation Bank, Ohlone Preserve Conservation Bank, and Ourson Ridge Conservation Bank.

2.8 PERMITS AND APPROVALS

The CEQA documentation for the proposed program will be used by various regulatory agencies issuing permits, as well as other approvals and consultations for the proposed program. Specifically, information about the proposed program and the environmental analysis will be used by several agencies as part of their decision-making process regarding regulations applicable to the proposed program. **Table 2-2** provides a list of these agencies and the applicable permits, approvals, and consultations that are expected to be required for the proposed program.

Table 2-2. Proposed Program Regulatory Permits, Approvals, and Consultations

Agency	Permit / Approval / Consultation
Federal Agencies	
U.S. Army Corps of Engineers	Section 404 of the Clean Water Act (CWA) – Regional General Permit
	National Environmental Policy Act – potential issuance of a Finding of No Significant Impact (FONSI)
	National Historic Preservation Act compliance: Section 106 cultural and historic structures/sites National Register of Historic Places (NRHP) compliance, if applicable
U.S. Fish and Wildlife Service	Federal Endangered Species Act – issuance and authorization under incidental take provision of a Biological Opinion
	Migratory Bird Treaty Act compliance
	Bald and Golden Eagle Protection Act compliance
State Agencies	
California Department of Fish and Wildlife	Section 1600 *et seq.* of the California Fish and Game Code (F&G Code) – Routine Maintenance Agreement
	Native Plant Protection Act compliance
San Francisco Bay Regional Water Quality Control Board (Region 2) and Central Coast Regional Water Quality Control Board (Region 3)	Section 401 of the Clean Water Act (CWA) – water quality certification
	Porter-Cologne Water Quality Control Act – waste discharge requirements
	Section 303(d) of the Clean Water Act – compliance with applicable total maximum daily load (TMDL) requirements or 303(d) listed waters
California Department of Transportation (Caltrans)	Encroachment permit for maintenance activities that encroach onto State right-of-way.
	Transportation permit for maintenance activities that require movement of oversized or excessive load vehicles on State roadways.
	Local Assistance Program through Bridge Preventative Maintenance Program.
Regional and Local Agencies	
Bay Area Air Quality Management District	Burn permits for pile burning activities.
County of San Mateo	Coastal Development Permit for any maintenance activities that occur in unincorporated areas of the County and within the Coastal Zone
	Tree removal permit for removal of any protected trees or heritage trees as defined in the County's Significant and Heritage Tree Protection regulations.

Table 2-3. Maintenance Program Best Management Practices

BMP Number	BMP Title	BMP Description
General Avoidance and Minimization Measures		
GEN-1	Staging and Access	▪ Staging, access, and parking areas will be located outside of sensitive habitats to the extent feasible. ▪ Staging areas will be located 30 feet from the top of bank (or as far as feasibly possible) or on the outboard side of levees. ▪ Vegetation removal shall be limited to the minimum amount necessary to provide access.
GEN-2	Minimize Area of Disturbance and Site Maintenance	▪ Areas of disturbance will be limited to the smallest footprint necessary. For maintenance activities near waterways or other sensitive habitat, the designated work area shall be clearly identified in the field using highly visible material, and work will not be conducted outside this area. ▪ Keep excavated soil and materials on the site where they will not collect into the street or get transported to storm drains or nearby water bodies by rainfall or runoff in order to avoid deleterious effects to fish, wildlife, and beneficial uses. ▪ ▪ Transfer excavated materials to dump trucks on the site, not in the street.
GEN-3	Construction Entrances and Perimeter	▪ Establish and maintain effective perimeter controls and stabilize all construction entrances and exits to sufficiently control erosion and sediment discharges from site and tracking off site. ▪ Sweep or vacuum any street tracking immediately and secure sediment source to prevent further tracking. Never hose down streets to clean up tracking. ▪ When in-channel work is required, where available use existing ingress or egress points or perform work from the top of the stream banks.
GEN -4	Salvage/Reuse of Plant and Woody Material	▪ Large wood or weed-free topsoil displaced by project activities may be stockpiled for use during site restoration. Native vegetation displaced by project activities will be stockpiled if it would be useful during site restoration. ▪ Stockpiled material shall not be placed over riparian or wetland vegetation. Stockpiled material shall not be placed in areas where it could enter the stream, riparian or wetland areas. ▪ To the extent feasible, all other woody material that is not re-usable should be disposed at a composting facility.
GEN-5	Non-Hazardous Materials	▪ Berm and cover stockpiles of sand, dirt or other construction material with tarps when rain is forecast or if not actively being used within 14 days.
GEN-6	Hazardous Materials Storage/ Disposal	▪ Label all hazardous materials and hazardous wastes (such as pesticides, paints, thinners, solvents, fuel, oil, and antifreeze) in accordance with city, county, state, and federal regulations. ▪ Store hazardous materials and wastes in water tight containers, store in appropriate secondary containment, and cover them at the end of every work day or during wet weather or when rain is forecast.

BMP Number	BMP Title	BMP Description
		▪ Follow manufacturer's application instructions for hazardous materials and be careful not to use more than necessary. Do not apply chemicals outdoors when rain is forecast within 24 hours. ▪ Arrange for appropriate disposal of all hazardous wastes.
GEN-7	Spill Prevention and Control	▪ Keep spill cleanup materials (rags, absorbents, etc.) available at the construction site at all times. ▪ Inspect vehicles and equipment frequently for and repair leaks promptly. On-site monitor should insect beneath all vehicles that have been parked more than 15 minutes before they leave the work area. Use drip pans to catch leaks until repairs are made. ▪ Clean up spills or leaks immediately and dispose of cleanup materials properly. ▪ Do not hose down surfaces where fluids have spilled. Use dry cleanup methods (absorbent materials, cat litter, and/or rags). ▪ Sweep up spilled dry materials immediately. Do not try to wash them away with water or bury them. If water must be used, the Contractor shall collect the water and spilled fluids and dispose of it as hazardous waste. ▪ Clean up spills on dirt areas by digging up and properly disposing of contaminated soil. ▪ Small spills (less than 18 inches in diameter) including small quantities of oil, gasoline, paint or other materials should be controlled by the first responder (maintenance staff) and do not necessarily require an emergency response team. Medium spills (greater than 18 inches but less than 6 feet in diameter) are typically controlled by the first responder (maintenance staff) but police or fire department hazardous materials (HAZMAT) teams may be called based on conditions. Report significant spills (larger than 6 feet in diameter and any "running" spill) immediately. You are required by law to report all significant releases of hazardous materials, including oil. To report a spill, contact the San Mateo County Environmental Health Services Division, or other emergency office (e.g., local fire or police department) as warranted, immediately and document the spill using the spill documentation form . Alternatively, 1) dial 911, the local emergency response number, 2) the National Response Center at (800) 424-8802; or 2) call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours). As appropriate, contact other agencies including California Occupational Safety and Health Administration or the Regional Water Quality Control Board. All chemical spills shall be reported as soon as possible to the emergency site contact.
GEN-8	Waste Management	▪ Cover waste disposal containers securely at the end of every work day and during wet weather. ▪ Check waste disposal containers frequently for leaks and to make sure they are not overfilled. Never hose down a dumpster on the construction site. ▪ Ensure that portable toilets have a secondary containment plan (e.g., a containment pan). ▪ Clean or replace portable toilets and inspect them frequently for leaks and spills.

BMP Number	BMP Title	BMP Description
		▪ Dispose of all wastes and debris properly. Recycle materials and wastes that can be recycled (such as asphalt, concrete, aggregate base materials, wood, gyp board, pipe, etc.) ▪ Dispose of liquid residues from paints, thinners, solvents, glues, and cleaning fluids as hazardous waste.
GEN-9	Vehicle Maintenance and Parking	▪ Designate an area, fitted with appropriate BMPs, for vehicle and equipment parking and storage. ▪ Perform major maintenance, repair jobs, and vehicle and equipment washing off site. ▪ Conduct vehicle and equipment cleaning at County corporation yards and ensure that rinse water does not run into gutters, streets, storm drains, or surface waters. ▪ If vehicle maintenance must be done on-site, work in a bermed area (e.g., sand bags, gravel bags, compost socks, or other barrier material) at least 150 feet away from creek channels, away from storm drains and over a drip pan big enough to collect fluids. ▪ Keep an ample supply of spill clean-up materials near fueling, vehicle maintenance and hazardous materials/hazardous waste storage areas. Inventory clean-up materials monthly and restock as needed. ▪ Post proper fueling and spill clean-up instructions at fueling areas. Never leave the area while equipment is being filled. ▪ Recycle or dispose of fluids as hazardous waste. ▪ Do not clean vehicle or equipment on-site using soaps, solvents, degreasers, steam cleaning equipment, etc. ▪ Perform vehicle and mobile equipment steam cleaning, pressure washing or degreasing only over a containment designed to collect any generated wash water. Collect wash water and discharge to sewer via an oil water separator. Do not pour wash water down storm drains or sewers connected to septic systems.
GEN -10	Equipment Maintenance & Fueling	▪ A separate area should be designated for equipment maintenance and fueling, away from any slopes, watercourses, or drainage facilities. ▪ Equipment should not be stored in areas that will potentially drain to watercourses or drainage facilities. If equipment must be stored in areas with the potential to generate runoff, drip pans, berms, sandbags, or absorbent booms should be employed to contain any leaks or spills. ▪ Equipment should be inspected daily for leaks or damage and promptly repaired. ▪ Fueling and maintenance of vehicles should take place at least 65 feet away from waterways. ▪ In the event of a spill, follow procedures outlined in BMP GEN-7.
GEN-11	Paving and Asphalt Work	▪ Avoid paving and seal coating in wet weather or when rain is in the forecast, to prevent materials that have not cured from contacting stormwater runoff. ▪ Cover storm drain inlets and manholes when applying seal coat, tack coat, slurry seal or fog seal; and when saw cutting asphalt or concrete.

BMP Number	BMP Title	BMP Description
		▪ Collect and recycle or appropriate dispose of excess abrasive gravel or sand. Do not sweep this material into gutters. ▪ Do not use water to wash down fresh asphalt concrete pavement. ▪ Use filter fabric, catch basin inlet filters, or gravel bags to keep slurry out of the storm drain system. ▪ Shovel, absorb or vacuum saw-cut slurry and dispose of all waste as soon as work is complete in one location or at the end of the work day.
GEN-12	Concrete, Grout and Mortar Application	▪ Store concrete, grout, and mortar away from storm drains or waterways, and on pallets under cover to protect them from rain, runoff and wind. ▪ Wash out concrete equipment/trucks offsite or in a designated washout area, where the water will flow into a temporary waste pit, and in a manner that will prevent leaching into the underlying soil or onto surrounding areas. Let concrete harden and dispose of in accordance to local regulations. ▪ When washing exposed aggregate, prevent washwater from entering storm drains. Block any inlets and vacuum gutters, hose washwater onto dirt areas, or drain onto a bermed surface to be pumped and disposed of properly.
GEN-13	Exclude Concrete from Channel	▪ For maintenance activities that involve concrete pouring, the County shall ensure that poured concrete 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 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. Containment structures should be installed to control the placement of wet concrete and to prevent it from entering the channel outside of those structures. ▪ 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. ▪ No dry concrete shall be placed on the banks or in a location where it could be carried into the channel by wind or runoff.
GEN-14	Concrete Washout Facilities	▪ Concrete washout facilities should be established for maintenance activities that require on-site preparation and use of Portland cement concrete, asphalt concrete or cement morta. These facilities capture wash water, concrete and aggregate flushed from concrete mixers, chutes, etc. Concrete washouts may be contained settling basins dug into the ground, raised and contained structures, trailers, etc. They are also applicable for projects that require equipment washouts. ▪ An appropriate area for the washout must be identified at least 65 feet away from watercourses and storm drains in case of accidental breaching. The storage capacity of the basin must be sized correctly for the job. ▪ The location of the concrete washout should be clearly labeled and all employees should be educated about proper concrete disposal.

BMP Number	BMP Title	BMP Description
		▪ Avoid mixing excess amounts of fresh concrete or cement mortar on-site. ▪ Wash out concrete mixers only in designated washout areas where the water will flow into temporary sealed basins. Use as little water as possible to reduce hardening and evaporation time of waste products. ▪ Construct a basin large enough to contain all liquid and waste concrete materials generated during washout procedures. A minimum basin size is 9 feet x 9 feet and 2 feet deep. Plastic liner materials shall be a minimum of 60-mil polyethylene sheeting free of holes and defects. ▪ Recycle washout by pumping back into mixers for reuse when possible. ▪ The concrete washout should be checked frequently to ensure proper use and effectiveness. ▪ At 75 percent capacity, the washout must be cleaned or new facilities must be constructed and ready for use. ▪ The hardened concrete and materials related to the washout must be broken up, removed, and disposed of in accordance to local regulations. ▪ Area disturbed by the concrete washout must be repaired.
GEN-15	Painting and Paint Removal	▪ Never clean brushes or rinse paint containers into a street, gutter, storm drain, or stream. ▪ For water-based paints, paint out brushes to the extent possible, and rinse into a drain that goes to the sanitary sewer. Never pour paint down a storm drain. ▪ For oil-based paints, paint out brushes to the extent possible and clean with thinner or solvent in a proper container. Filter and reuse thinners and solvents. Dispose of excess liquids as hazardous waste. ▪ Paint chips and dust from non-hazardous dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash. ▪ Chemical paint stripping residue and chips and dust from marine paints or paints containing lead, mercury, or tributyltin must be disposed of as hazardous waste. Lead based paint removal requires a state-certified contractor.
GEN-16	Timing of Work	▪ In general, routine maintenance and construction activities that take place in sensitive habitat and/or in channels below ordinary high water will be conducted during the dry season (June 15 through October 15). Maintenance activities that are in upland areas and that would not affect streams may occur at times when there is no predicted rainfall (chance of precipitation is less than 30 percent chance of rain). Activities that are subject to permit requirements will be conducted during the period authorized by the permits.
GEN-17	Maintain Traffic Flow	▪ To the extent feasible, work shall be staged and conducted in a manner that maintains two-way traffic flow on roadways in the vicinity of the work site.

BMP Number	BMP Title	BMP Description
		▪ Heavy equipment and haul traffic shall be prohibited in residential areas to the greatest extent feasible. When no other route to and from the site is available, heavy equipment and haul traffic through residential areas shall be restricted to the hours of 8 a.m. to 5:30 p.m., Monday through Friday. ▪ If heavy equipment or hauling is required beyond the hours above, the County or their contractor would provide notice to adjacent property owners 48 hours in advance of such activities.
GEN-18	Traffic Control and Public Safety	▪ In the event that work activities require the temporary closure of any traffic lanes, the County shall implement measures to guide traffic (such as signage and flaggers), safeguard construction workers, provide safe passage of vehicles, and minimize traffic impacts through the duration of work activities. The County also shall notify local emergency service providers regarding any planned lane closures. ▪ For any other work within or near the roadway that could pose a hazard to the public, the County shall install/implement appropriate measures, such as fences, barriers, flagging, guards, and/or signs, to give adequate warning and provide protection from the potentially dangerous condition. ▪ For work activities along or near roadways with sidewalks and bike lanes, the County shall implement measures to ensure the safe passage of pedestrians and bicyclists around the work site. ▪ Where work is proposed at a recreational park or trail, warning signs will be posted several feet beyond the limits of work. Signs will also be posted if trails will be temporarily closed. ▪ Public transit access and routes will be maintained in the vicinity of the work site. If public transit will be affected by temporary road closures and require detours, affected transit authorities will be consulted and kept informed of project activities.
GEN-19	Dust Management Controls	▪ The County will implement the Bay Area Air Quality Management District (BAAQMD) Basic Dust Control Measures. Current measures stipulated by the BAAQMD Guidelines include the following: ▪ All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day or as necessary. ▪ All haul trucks transporting soil, sand, or other loose material off-site shall be covered. ▪ All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. ▪ All vehicle speeds on unpaved roads shall be limited to 15 mph. ▪ All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. ▪ Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

BMP Number	BMP Title	BMP Description
		▪ 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.
GEN-20	Firearms	▪ No firearms (except for federal, State, or local law enforcement officers and security personnel) will be permitted at the project site to avoid harassment, killing or injuring of wildlife.
GEN-21	Domestic Animals	▪ No animals (e.g., dogs or cats) can be brought to the project site to avoid harassment, killing or injuring of wildlife.
GEN -22	Site Stabilization	▪ Earthwork will be completed as quickly as possible, and where practical, site restoration will occur immediately following maintenance. If site restoration involves planting, such activities may commence in late fall or early winter during the onset of rainy season. ▪ Bare soil surfaces resulting from maintenance and/or construction activities shall be covered with suitable erosion controls (seed or plant vegetation, fabrics, hydroseeding, mulch, etc.): - Within 12 hours of any break in work unless project activities will resume within 7 days. - No later than 3 days following the disturbance during the rainy season (approximately October through April). - No later than 7 days following the disturbance during the dry season (approximately May through September). - Every effort shall be made to immediately cover bare soil surfaces resulting from maintenance and/or construction activities prior to storms. ▪ Revegetation activities will include only local plant materials native to the San Francisco Peninsula region.
GEN-23	Fire Prevention	▪ All earthmoving and portable equipment with internal combustion engines will be equipped with spark arrestors. ▪ During the high fire danger period (April 1–December 1), work crews will: - Have appropriate fire suppression equipment available at the work site. - Keep flammable materials, including flammable vegetation slash, at least 10 feet away from any equipment that could produce a spark, fire, or flame. - Not use portable tools powered by gasoline-fueled internal combustion engines within 25 feet of any flammable materials unless a round-point shovel or fire extinguisher is within immediate reach of the work crew (no more 25 feet away from the work area).
GEN-24	Investigation of Utility Line Locations	An evaluation of the locations of utility lines that could be affected by maintenance activities will be conducted annually as part of the preparation of the Annual Notification. Utilities will be avoided as much as possible. For maintenance areas with the potential for effects on utility services, the following measures will be implemented:

BMP Number	BMP Title	BMP Description
		▪ Utility excavation or encroachment permits will be required from the appropriate agencies. These permits include measures to minimize utility disruption. The County and its contractors will comply with permit conditions. Such conditions will be included in construction contract specifications. ▪ Utility locations will be verified through a field survey (potholing) and use of the Underground Service Alert services. ▪ Detailed specifications will be prepared as part of the design plans to include procedures for the excavation, support, and/or fill of areas around utility cables and pipelines. All affected utility services will be notified of the County's maintenance plans and schedule. Arrangements will be made with these entities regarding protection, relocation, or temporary disconnection of services. ▪ Residents and businesses in the project area will be notified of planned utility service disruption 2 to 4 days in advance, in conformance with state standards. ▪ Disconnected cables and lines will be reconnected promptly.
GEN-25	Retention of Tree Stumps / Rootwads	▪ Objects embedded/anchored in the bank, such as tree stumps, shall not be removed if removal could result in release of sediment into the channel. Stumps and rootwads that potentially serve as basking sites or that encourage pool formation should be left in place whenever possible. Protruding objects that could capture additional debris and result in obstruction of the channel (e.g. the branches and trunk of a downed tree) may be trimmed. If an embedded object must be removed to prevent a debris jam, turbidity control practices shall be used, and the bank shall be reseeded, re-vegetated and/or mulched following removal.
GEN-26	Decontamination of Project Equipment and Vehicles	▪ Equipment, boots and waders used for in-water maintenance activities will be decontaminated prior to entering and exiting the maintenance site and/or between each use in different water bodies to avoid the introduction and transfer of organisms between water bodies. Methods to be employed may include: drying, using a hot water soak, or freezing, as appropriate to the type of gear or equipment. The County shall begin the decontamination process by thoroughly scrubbing equipment, paying close attention to small crevices such as boot laces, seams, net corners, etc., with a stiff-bristled brush to remove all organisms. To decontaminate by drying, the County shall allow equipment to dry thoroughly (i.e., until there is a complete absence of water), preferably in the sun, for a minimum of 48 hours. To decontaminate using a hot water soak, the County shall immerse equipment in 140°F or hotter water and soak for a minimum of 5 minutes. To decontaminate by freezing, the County shall place equipment in a freezer 32°F or colder for a minimum of 8 hours. Repeat decontamination is required only if the equipment/clothing is removed from the site, used within a different waterbody, and returned to the project site. ▪ Vehicles, watercraft, and other maintenance equipment used for in-water maintenance activities that are too large to immerse in a hot water bath shall be decontaminated by pressure washing with hot water (minimum of 140°F at the point of contact or 155°F at the nozzle or by using other effective techniques). Watercraft engines and all areas that could contain standing water (e.g., live wells, bilges, etc.) shall be flushed for a minimum of 10 minutes. Following the hot water wash, vehicles, watercraft and equipment shall be dried as thoroughly as possible.

BMP Number	BMP Title	BMP Description
		▪ A bleach solution shall be used to decontaminate vehicles, watercraft and other maintenance gear and equipment at a designated location where runoff can be contained and not allowed to enter streams or other sensitive habitat areas.
GEN-27	Vegetation and Tree Removal	▪ The disturbance or removal of vegetation shall not exceed the minimum necessary to complete maintenance activities. The use of bulldozers, backhoes, or other heavy equipment to remove vegetation along stream banks shall be avoided wherever feasible. ▪ The County may remove up to two non-hazardous trees greater than 12 inches in diameter per year from natural channels below ordinary high water if the trees are restricting the capacity of the channel, causing erosion or flooding, or limiting access to perform maintenance work. Trees will be cut at ground level and the root mass left in place to maintain bank stability. No non-hazardous trees greater than 36 inches in diameter will be removed under this program. This measure does not apply to trees considered a hazard as defined by the International Society of Arboriculture, which may include dead or dying trees, dead parts of live trees, or unstable live trees (due to structural defects or other factors) that are within striking distance of people or property (a target) that have the potential to cause death, injury, or substantial property damage. ▪ Removed vegetation shall be placed directly into a disposal vehicle and removed from the site, and shall not be permitted to remain onsite overnight. However, if removed vegetation will be used onsite for erosion control or slash and will not be moved or disturbed, it may be stockpiled onsite for longer than an overnight. Stockpiled vegetation shall not be piled on the ground unless it is later transferred, piece by piece, under the direct supervision of the biological monitor or qualified biologist.
GEN-28	Herbicide Application	▪ Herbicide application shall only be conducted when the climate is dry and when wind speeds do not exceed 7 miles per hour. Herbicides shall not be used in or adjacent to any fish-bearing stream, lake, pond or other water bodies supporting suitable habitat for California red-legged frog or other listed species.
Erosion Control Measures		
EC-1	Brush Layering	Brush layering is a technique used to stabilize shallow slope failures or rebuild fill slopes with live brush cuttings (usually willows or other types of branches) with soil backfill or soil lifts. Live brush layers act as horizontal drains and improve slope stability by providing tensile strength and natural revegetation. Brush layering may include the use of synthetic geogrids or fabric soil wraps, large vegetated boulder revetments, or other structural toe support. For a more detailed description of this BMP, refer to Appendix A.
EC-2	Brush Packing	Brush packing is a biotechnical gully and slump repair technique. Brush packing utilizes alternating layers of live branch cuttings (from rootable plant species) and soil to repair large rills, gullies, and slumps. The brush packing technique is more appropriate for the repair of gullies on slopes, and it can be implemented with hand labor. For a more detailed description of this BMP, refer to Appendix A.

BMP Number	BMP Title	BMP Description
EC-3	Live Staking	Live staking involves the insertion of live, vegetative cuttings into the ground in a manner that allows the cutting (stake) to take root and grow. This BMP is used to reduce the potential for soil to become water borne, to reduce water velocity and erosive forces, and to aid in habitat protection. Poles used in willow walls and through rip rap may be a structural application. Sprigs may be used in individual planting spots along a streambank. For a more detailed description of this BMP, refer to Appendix A.
EC-4	Live Pole Drain	Live pole drains are a biotechnical technique intended to drain excess moisture away from an unstable site. Plants (typically willows) are used to construct bundles which will sprout and grow, with the moisture continuing to drain from the lower end. The bundles are placed in shallow trenches in a manner that they intersect and collect excessive slope moisture. See Appendix A for additional description about this BMP.
EC-5	Wattles/ Fascines	Wattles and fascines are live branch cuttings, usually willows, bound together into long, tubular bundles used to stabilize slopes and stream banks. Both wattles and live fascines are true biotechnical practices. The live branches and live stakes provide the biological element while the stems, rope ties and wedge-shaped wooden stakes all combine to provide the structural elements. Fascines differ from wattles in that the branch cuttings all point in the same direction in fascines, where they may point in either direction in wattles. Wattles are typically aligned on contour, where fascines are angled slightly upslope and thus tend to produce more vigorous growth. For a more detailed description of this BMP, refer to Appendix A.
EC-6	Hand Seeding	Hand seeding is broadcasting grass seed on disturbed or bare soil areas by hand or a hand seeding device. This BMP is used to reduce the potential for soil to become water or air borne, reduce erosion after vegetation establishment, provide for vegetative buffers and aid in habitat protection. Seeding with appropriate seed mixes also helps discourage colonization by non-native and invasive plant species. For a more detailed description of this BMP, refer to Appendix A.
EC-7	Hydroseeding	Hydroseeding is broadcasting grass seed, tackifier, wood fiber mulch, or other similar substance, and water on disturbed areas using a hydroseeding machine. This BMP is used to reduce the potential for soil becoming water or air borne, to reduce erosion before and after vegetation is established, provide vegetative buffers and to aid in habitat protection. Seeding with appropriate seed mixes will also help discourage colonization by non-native and invasive plant species. Hydroseeding may be used after soil disturbance is completed at construction/maintenance sites and/or on bare slopes. For a more detailed description of this BMP, refer to Appendix A.
EC-8	Mulching	Mulching is the application of rice or sterile straw, wood chips, leaf litter, redwood duff, or other suitable materials on the soil surface applied manually or by machine. This BMP is used to reduce the potential for soil becoming water or air borne, and to encourage vegetation establishment. This BMP is used to protect the soil surface and to protect newly seeded areas. For a more detailed description of this BMP, refer to Appendix A.
EC-9	Vegetative Buffer	A vegetative buffer is a strip of vegetation adjacent to sensitive areas, ditches, pavement and water bodies. This BMP prevents soil from becoming water borne and may help restore shallow slope failures by trapping soil and debris. For a more detailed description of this BMP, refer to Appendix A.

BMP Number	BMP Title	BMP Description
EC-10	Erosion Control Blankets and Mats	Erosion control blankets and mats are installed to protect the prepared soil surface of a steep slope. This BMP may be used at maintenance sites to provide stabilization/protection on steep slopes or stream banks. Erosion control blankets and mats are available in a variety of materials including jute, excelsior, blanket material, straw, wood fiber blanket, coconut fiber blanket, coconut fiber mesh, and straw coconut fiber blanket. Material selection should be based on the size of area, slope, surface conditions, revegetation plans, and channel velocity. Coir fabric/netting is a geo-textile product made from coconut fibers loosely woven into a fabric usually packaged in roll form. This fabric can be used to provide a reduction in water velocity/erosive forces and/or habitat protection and topsoil stabilization. Erosion control blankets and mats may be used in combination with seeding and/or vegetation. For a more detailed description of this BMP, refer to Appendix A.
EC-11	Surface Roughening	Surface roughening is a technique for roughening a bare soil surface with furrows running across the slope, stair stepping, or tracking with construction equipment. Surface roughening is intended to aid the establishment of vegetative cover from seed, to reduce runoff velocity and increase infiltration, and to reduce erosion and provide for sediment trapping. This BMP is typically applied on slopes steeper than 3:1. For a more detailed description of this BMP, refer to Appendix A.
EC-12	Rolling Dip	Rolling dips are ridges or ridge-and-channels constructed diagonally across a sloping road or utility right-of-way that is subject to erosion to limit the accumulation of erosive volumes of water on roads by diverting surface runoff at designated intervals. Rolling dips are appropriate to use on low and moderate grades and on both high or low traffic roads. For a more detailed description of this BMP, refer to Appendix A.
EC-13	Slope or Bank Stabilization	Where biotechnical methods are unsuitable for stabilizing streambanks, hardened solutions such as rock slope protection may be utilized along a failed portion of slope to provide a buttress against additional failure. To the extent feasible, this BMP should be combined with biotechnical solutions through installation of vegetated boulder revetments or vegetated rock slope protection. Refer to Appendix A for a more detailed description of this BMP.
EC-14	Energy Dissipator	An energy dissipator is a structure designed to control erosion at the outlet of a channel or conduit by reducing the velocity of flow and dissipating the energy. This BMP is recommended at the outlet of any new or replacement drainage culvert, which are points of high erosion potential. Energy dissipators are effective in absorbing the impact of flow and reducing the velocity to non-erosive levels. For a more detailed description of this BMP, refer to Appendix A.
Sediment/Water Quality Control Measures		
SC-1	Gravel Bags	Gravel bags can be used to keep water away from work areas and unstable slopes or for constructing cofferdams and clean water bypasses. This BMP is also typically used at construction or maintenance sites to protect storm drain outlets, gutters, ditches, and drainage courses. For a more detailed description of this BMP, refer to Appendix A.
SC-2	Silt Fence	A silt fence is a temporary sediment barrier consisting of fabric stretched across and attached to supporting posts and entrenched into soil. This BMP is generally used for perimeter protection (around construction/maintenance sites, stockpile areas). It may also be installed perpendicular to the flow direction to slow or stop water and to allow perimeter filtration, settling of soil particles, and to reduce water velocity. For a more detailed description of this BMP, refer to Appendix A.

BMP Number	BMP Title	BMP Description
SC-3	Straw Log, Straw Roll, Coir Log	Straw rolls/logs or coir logs may be used for temporary soil stockpile protection; protection of storm drains, gutters, and drainage courses; temporary check dams; bank or slope stabilization; and streambank toe protection. Alternatives to straw rolls/logs and coir logs include compostable filter socks/berms comprised of natural fibers and other bio-based materials. For a more detailed description of this BMP, refer to Appendix A.
SC-4	Inlet Protection	Storm drain inlets can be protected through installation of temporary barriers such as silt fences, gravel bags, and other proprietary barriers like geotextile inserts, biofilter bags, or compost socks. These barriers are intended to prevent and reduce the sediment discharged into storm drains by ponding runoff and allowing sediment to settle out. For a more detailed description of this BMP, refer to Appendix A.
SC-5	Stormwater Separation Systems	Stormwater separation systems are engineered devices installed in storm drain facilities to remove solids, grease and other pollutants. These may be installed where deep structures allow for their placement and maintenance, or where sufficient quantities of pollutant materials require regular removal in order for the storm drains to operate correctly. For a more detailed description of this BMP, refer to Appendix A.
SC-6	Diversion Berm	A diversion berm is a temporary ridge of compacted soil or aggregate base material, sandbags or contiguous bag berm constructed at the top or base of a disturbed slope. It may also consist of asphalt concrete or “cutback” at the top of a disturbed slope. This BMP is intended to direct stormwater runoff away from an unstable slope. For a more detailed description of this BMP, refer to Appendix A.
SC-7	Silt Curtain	The County shall install silt curtains or other appropriate silt filtering devices around excavation sites to prevent heavily silted water from impacting areas around the work site. The silt curtain or silt filtering device shall be maintained throughout all phases of excavation.
SC-8	Turbidity Monitoring	During in-water maintenance activities, the County will monitor turbidity levels up and downstream of the maintenance work area prior to conducting maintenance. The County will maintain a log of turbidity data and ensure that activities do not result in increases in turbidity of the stream of more than 20 percent of upstream sampling locations, as measured visually or by nephelometric turbidity units (NTU). Work will be halted if turbidity/siltation levels exceed 20 percent of upstream sampling levels and CDFW will be contacted for further guidance to ensure activities do not harm aquatic life.
Dewatering Measure		
DW-1	Channel Dewatering	▪ When in-water construction is unavoidable, streamflow shall be diverted around work areas by either installing cofferdams and/or clean water bypass systems. A cofferdam is a temporary structure built into a waterway to enclose a construction area and reduce sediment pollution from construction work in or adjacent to water. A clean water bypass is typically used for short-term diversion of small amounts of water over short distances to enable dewatering of a maintenance site. Depending on site conditions, these systems may be either gravity driven or require use of a pump to divert water around a construction area. For a more detailed description of this BMP, refer to Appendix A.

BMP Number	BMP Title	BMP Description
		▪ No dewatering will be conducted at creek sites with recent document occurrences of coho salmon within the past 5 years.
Sediment Testing and Disposal Measure		
ST-1	Testing and Disposal of Sediment	Depending on the location of the sediment removal site and upstream and adjacent land uses, the County will test the sediment prior to removal to determine suitability for disposal or reuse based on its chemical qualities. The test results and proposed disposal or reuse locations will be submitted to the Regional Water Quality Control Board (RWQCB) for review and approval. Samples will be analyzed according to the Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines (RWQCB 2000), as appropriate for the proposed disposal or reuse site. The results will be compared against federal and state environmental screening levels (ESLs) for protection of human health, groundwater quality, and terrestrial receptors. If hazardous levels of contaminants (as defined by federal and state regulations) are present, the material will be taken to a permitted hazardous waste facility.

Sources: San Mateo Countywide Water Pollution Prevention Program, 2012; San Mateo County, 2004 and 2013.

Table 2-4. Cultural Resources Best Management Practices

BMP Number	BMP Title	BMP Description
CUL-1	Review Cultural Resources Sensitivity Map Data and County Baseline Maps to Determine if the Work Area Has Been Subject to a Previous Cultural Resource Study	▪ During the early phases of Annual Work Plan development, the County will review the Cultural Sensitivity Map Data and County Baseline Maps (Appendix I) for all locations where ground-disturbing activities are proposed where excavation would be required beyond the facility's as-built design or otherwise reach previously undisturbed soils beyond existing engineered depths or extent. If the foregoing conditions are not applicable to the maintenance activity being performed, only BMPs CUL-4 and CUL-5 will be required. Based on the location of projects, and whether or not excavation or ground disturbance will occur beyond existing engineered depths or extent, BMPs CUL-2 through CUL-4 shall be implemented as follows: ▪ High Sensitivity: BMPs CUL-2, CUL-3, and CUL-4 ▪ Moderate Sensitivity: BMP CUL-2 and CUL-3 ▪ Low Sensitivity: *BMPs CUL-2 through CUL-4 not required* ▪ Unknown Sensitivity: BMP CUL-2 and CUL-3 ▪ BMPs CUL-5 and CUL-6 are applicable to all ground-disturbing activities in natural channels or native soils, regardless of the sensitivity level of the work area.
CUL-2	Record Search and Field Inventory for Highly or Moderately Sensitive Areas (Sensitivity Ratings 3-5), and Areas of Unknown Sensitivity	▪ The County will retain a qualified cultural resources specialist to conduct a review and evaluation of locations that involve soil disturbance/excavation in natural channels or native soils identified as Highly to Moderately Sensitive to determine the potential for these activities to affect significant cultural resources. ▪ The initial evaluation will be based on a review of archival information provided by the Northwest Information Center (NWIC) of the California Historical Resources Information System in regard to the project area based on a 0.25-mile search radius. This initial archival review will be completed by the professional archaeologist who will be able to view confidential site location data and literature to arrive at a preliminary sensitivity determination. ▪ It is recommended that the County conduct a review of the Sacred Lands Inventory of the Native American Heritage Commission (NAHC) and due diligence outreach with individuals identified by the NAHC and/or local historical societies or groups. This outreach would involve sending a letter with a request for pertinent information about cultural resources within the project area and to identify any concerns. This outreach is in addition to notification under PRC 21080.3.1 (i.e., CUL-3), and may be appropriate for projects that would not otherwise require Assembly Bill 52 notification. Such outreach is also encouraged under Section 106 implementing regulations at 36 CFR 800.4(a)(3) for identification of historic properties. ▪ The qualified archaeologist will conduct field inventory of the project area to determine the presence/absence of surface cultural materials. The results, along with any mitigation and/or management recommendations, will be presented to the County in an appropriate report format that includes any necessary maps, figures, and

BMP Number	BMP Title	BMP Description
		correspondence with interested parties. The report will also include a summary of the records search and archival research data, and pertinent geoarchaeological overviews and studies, and regional research designs, as appropriate. ▪ A summary table indicating appropriate management actions (e.g., monitoring during construction, presence/absence testing for subsurface resources, and data recovery) will be developed for each project work area reviewed. ▪ The maintenance activities will be implemented to avoid significant impacts to cultural resources, if possible. ▪ **EXCEPTIONS**: After the NWIC record search and NAHC sacred lands search have been conducted, the qualified archaeologist may determine that a field review is not necessary under the following circumstances: ▪ Locales that have previously been subject to cultural resource studies where no previously identified cultural resources or historical resources were documented. ▪ Locales that have previously been subject to cultural resources studies, but identified cultural resources have been determined by a qualified archaeologist/resource specialist as not eligible for listing in the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). ▪ A short report would be required to document the decision not to conduct a field study.
CUL-3	Consult with Native American Tribes	▪ The County, as the lead CEQA agency, has notified Native American tribes about the Maintenance Program according to PRC 21080.3.1 (also referred to as Assembly Bill 52); *only Native American tribes that have previously requested notification from the County pursuant to PRC 21080.3.1(b) require notification*. For tribes that request consultation under PRC 21080.3.1(b)(2), the County will consult with those tribes pursuant to PRC 21080.3.2 for projects in areas of high, moderate, and unknown sensitivity.
CUL-4	Construction Monitoring	▪ The County will retain a qualified archaeologist to be present on-site during ground-disturbing activities within areas identified as highly sensitive for cultural areas, unless the qualified archaeologist determines otherwise after the field inventory conducted under CUL-2. Similarly, after conducting the field study under CUL-2, the qualified archaeologist may determine that areas originally identified as moderately sensitive for cultural resources warrant monitoring during construction. The reasons for conducting monitoring in areas initially considered of moderate sensitivity would be discussed in the inventory report. ▪ The qualified archaeologist will have the authority to stop work if cultural resources are discovered. ▪ If any cultural resources are discovered during construction monitoring, BMP CUL-6 would be implemented as appropriate.
CUL-5	Conduct Pre-Maintenance Educational Training	At the beginning of each maintenance season, and in concert with implementing BMP BIO-1, as well as before conducting activities subject to BMP CUL-2 through CUL-4, all maintenance personnel will participate in an educational training session conducted by a qualified cultural resources specialist. This training will include instruction on how to identify

BMP Number	BMP Title	BMP Description
		historic and prehistoric resources that may be encountered, and will describe the appropriate protocol to be followed if resources are discovered during maintenance work.
CUL-6	Address Discovery of Cultural Remains or Historic or Paleontological Artifacts Appropriately	Unanticipated discoveries of cultural and paleontological resources may occur during maintenance construction activities. Examples of cultural remains are obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or significant areas of tool-making debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period artifacts may include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. Paleontological artifacts are fossilized remains of plants and animals. Work will be restricted or stopped in areas where remains or artifacts are found until proper protocols are met. <u>Protocol for treatment of prehistoric or historic cultural resources:</u> 1. Work at the location of the find will halt immediately within 50 feet of the find. A "no work" zone will be established utilizing appropriate flagging to delineate the boundary of this zone, which will measure at least 50 feet in all directions from the find. 2. The County will retain the services of a consulting archaeologist, who will visit the discovery site as soon as practicable and perform minor hand excavation to describe the archaeological or paleontological resources present and assess the amount of disturbance. 3. The consulting archaeologist will provide to the County and USACE, at a minimum, written and digital-photographic documentation of all observed materials, utilizing the CRHR and NRHP guidelines for evaluating archaeological resources. Based on the assessment, the County and USACE will identify the CEQA and Section 106 cultural resources compliance procedures to be implemented. 4. If the consulting archaeologist determines that the find appears not to meet the CRHR or NRHP criteria of significance, and a USACE archaeologist concurs with the consulting archaeologist's conclusions, construction may continue while monitored by the consulting archaeologist. The authorized maintenance work will resume at the discovery site only after the County has retained a consulting archaeologist to monitor and the Maintenance Manager has received notification from USACE allowing work to continue. 5. If the find appears significant, avoidance of additional impacts is the preferred alternative. The consulting archaeologist will determine if adverse impacts to the resources can be avoided. 6. Where avoidance is not practical (e.g., maintenance activities cannot be deferred or must be completed to satisfy the Maintenance Program objective), the County will develop an action plan (also known as a data recovery plan) and submit it to USACE within 48 hours of determining that maintenance activities cannot be deferred. The action plan will be submitted by email to the appropriate archeological/cultural resources contact at the USACE. The action plan is equivalent to a data recovery plan. It will be prepared in accordance with the current professional

BMP Number	BMP Title	BMP Description
		standards and state guidelines for reporting the results of the work, and will describe the services of a Native American consultant and a proposal for curation of cultural materials recovered from a non-grave context. 7. The recovery effort will be documented in a report prepared by the consulting archaeologist in accordance with current archaeological standards. Any non-grave artifacts will be placed with an appropriate repository. 8. In the event of discovery of human remains (or if a find consists of bones suspected to be human), the field crew supervisor will take immediate steps to secure and protect such remains from vandalism during periods when work crews are absent.) 9. The maintenance crew supervisor will immediately notify the San Mateo County Coroner and provide any information that identifies the remains as Native American. If the remains are determined to be those of a prehistoric Native American or a Native American from the ethnographic period, the Coroner will contact NAHC within 24 hours of being notified about the remains. NAHC will designate and notify a Most Likely Descendant (MLD) within 24 hours. The MLD will have 24 hours to consult and provide recommendations for the treatment or disposition, with proper dignity, of the human remains and grave goods. 10. Preservation in situ is the preferred option for human remains. Human remains will be preserved in situ if continuation of the maintenance work, as determined by the consulting archaeologist and MLD, will not cause further damage to the remains. The remains and artifacts will be documented, the find location carefully backfilled (with protective geo-fabric if desirable), and the information recorded in County Maintenance Program files. 11. If human remains or cultural items are exposed during maintenance that cannot be protected from further damage, they will be exhumed by the consulting archaeologist at the discretion of the MLD and reburied, with the concurrence of the MLD, in a place mutually agreed upon by all parties. <u>Protocol for treatment of paleontological resources:</u> 12. Work at the location of the find will halt immediately within 50 feet of the find. A “no work” zone will be established utilizing appropriate flagging to delineate the boundary of this zone, which will measure at least 50 feet in all directions from the find. 13. The County shall retain the services of a consulting paleontologist. The consulting paleontologist will meet the Society for Vertebrate Paleontology’s criteria for a qualified professional paleontologist (Society of Vertebrate Paleontology 2010). 14. The consulting paleontologist shall visit the discovery site as soon as practicable and perform minor hand-excavation to describe the paleontological resources present and assess the amount of disturbance. The consulting paleontologist will follow the Society for Vertebrate Paleontology’s guidelines (2010) for treatment of the artifact. Treatment may include preparation and recovery of fossil materials for an appropriate museum or

BMP Number	BMP Title	BMP Description
		university collection, and may include preparation of a report describing the finds. The County will be responsible for ensuring that the consulting paleontologist's recommendations for treatment are implemented.

Table 2-5. Biological Resources Best Management Practices

BMP Number	BMP Title	BMP Description
BIO-1	Environmental Awareness Training	Prior to commencing maintenance activities in a given year, all participating maintenance personnel will attend a worker environmental awareness training program. The training will include a brief review of special-status species, sensitive habitats, and other sensitive resources that may exist in the project area, including field identification, habitat requirements, and the legal status and protection of each relevant species, as well as locations of sensitive biological resources. The training will include materials concerning the following topics: sensitive resources, resource avoidance, permit conditions, and possible consequences for violations of State or Federal environmental laws. The training will cover the maintenance activity's conservation measures, environmental permits, and regulatory compliance requirements, as well as the roles and authority of the monitors and biologist(s). It will include printed material and an oral training session by a qualified biologist.
BIO-2	Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering	Prior to dewatering a construction site, all reasonable efforts shall be made to capture and relocate native fish and amphibian species if necessary to avoid direct mortality and minimize take. Streams that support a sensitive species (e.g., steelhead, California red-legged frog) will require a relocation effort led by a qualified biologist (see also BMPs BIO- 3 through BIO-5). The following measures are consistent with those defined as *reasonable and prudent* by NMFS for projects concerning several central California Evolutionarily Significant Units for coho salmon and steelhead trout. ▪ Fish relocation activities will be performed only by qualified fisheries biologists that have experience with fish capture and handling. ▪ Perform relocation activities during morning periods when air temperatures are coolest. ▪ Periodically measure air and water temperatures. Cease activities when water temperatures exceed temperatures allowed by CDFW and NMFS. ▪ Capture methods may include fish landing nets, dip nets, buckets and by hand. ▪ Exclude fish from re-entering work area by blocking the stream channel above and below the work area with fine-meshed net or screens. Mesh will be no greater than 1/8 inch (3.1mm). The bottom edge of net or screen will be completely secured to the channel bed to prevent fish from re-entering work area. Exclusion screening will be placed in areas of low water velocity to minimize impingement of fish. Screens will be checked periodically and cleaned of debris to permit free flow of water. ▪ Prior to capturing fish, the qualified biologist will determine the most appropriate release location(s). Captured aquatic life shall be released immediately in the closest suitable body of water adjacent to the work site, taking into consideration the following when selecting release site(s): ▪ Similar water temperature as capture location ▪ Ample habitat for captured fish ▪ Low likelihood of fish re-entering work site or becoming impinged on exclusion net or screen.

BMP Number	BMP Title	BMP Description
		▪ Avoid areas with large concentrations of potential predators in immediate vicinity. ▪ Minimize handling of salmonids. However, when handling is necessary, always wet hands or nets prior to touching fish. ▪ Temporarily hold fish in cool, shaded, aerated water in a container with a lid or in a live–car (i.e., a net enclosure that can be placed in a pond to temporarily hold the fish). ▪ If fish are held in a container, 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. ▪ Place a 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 should be released and rescue operations ceased. ▪ Avoid overcrowding in containers. Have at least two containers and segregate young-of-year fish from larger age-classes to avoid predation. Place larger amphibians, such as Pacific giant salamanders, in container with larger fish. ▪ If fish are abundant, periodically cease capture, and release fish at predetermined locations. ▪ 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. ▪ Submit reports of fish relocation activities to CDFW and NMFS in a timely fashion. ▪ If feasible, plan on performing initial fish relocation efforts several days prior to the start of construction. This provides the fisheries biologist an opportunity to return to the work area and perform additional passes immediately prior to construction. In many instances, additional fish will be captured that eluded the previous day's efforts. The biological monitor or qualified biologist shall check daily for stranded aquatic life as the water level in the dewatering area drops. ▪ If mortality during relocation exceeds the amount authorized by the applicable permits or, if no amount is specified, 5 percent, stop efforts and immediately contact the appropriate agencies (CDFW and NMFS).
BIO-3	California Red-legged Frog Protection Measures	If suitable habitat for California red-legged frog is determined to exist in or around the work area where maintenance activities are planned to occur, the County will implement applicable protection measures as follows: ▪ No more than twenty-four (24) hours prior to the date of initial ground disturbance or mowing, a pre-activity survey for the California red-legged frog will be conducted by a qualified biologist at the work site. The survey will consist of walking the work area limits to ascertain the possible presence of the species. The qualified biologist will investigate all potential areas that could be used by the California red-legged frog for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as those of California ground squirrels (*Spermophilus beecheyi*) or gophers (*Thomomys bottae*). If any adults, subadults, juveniles, tadpoles, or eggs are found, the qualified biologist will contact the U.S. Fish and Wildlife Service (USFWS) to determine if

BMP Number	BMP Title	BMP Description
		moving any of the individuals is appropriate. If the USFWS approves moving animals, the biologist and USFWS will identify a suitable relocation site, and the County will ensure the qualified biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Only qualified biologists will capture, handle, and monitor the California red-legged frog. ▪ To minimize harassment, injury, death, and harm to individual California red-legged frogs, one of the following two measures will be implemented. ▪ An approved, qualified biologist(s) will be on-site during all activities that may result in take of the California red-legged frog, as determined by the biologist taking into account all information gathered during the desktop audit of the site as well as the preconstruction survey. Qualified biologists must be approved by the USFWS. or ▪ Prior to pre-activity surveys, personnel will enclose the work area with an exclusion fence with a minimum height above grade of 42 inches. The bottom of the fence will either be buried a minimum of six inches below ground or otherwise secured in a manner approved by the USFWS and will remain in place during all maintenance activities in order to prevent California red-legged frogs from entering the work area. Escape ramps, funnels, or other features that allow animals to exit the work area, but which will prohibit the entry of such animals, will be provided in the exclusion fencing. A qualified biologist will conduct a pre-activity survey of the fence installation area immediately prior to (i.e., the day of) the commencement of installation and will be on-hand to monitor fence installation. The exclusion fencing will be inspected daily by maintenance personnel and maintained for the duration of maintenance implementation. ▪ The qualified biologist(s) will be given the authority to freely communicate verbally, by telephone, electronic mail, or in writing at any time with maintenance personnel, any other person(s) at the work area, otherwise associated with the maintenance work, the USFWS, the CDFW, or their designated agents. The qualified biologist will have oversight over implementation of all the conservation measures in this programmatic biological opinion, and will have the authority and responsibility to stop work activities if they determine any of the associated requirements are not being fulfilled. If the qualified biologist(s) exercises this authority, the USFWS will 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 Fish and Wildlife Office at telephone (916) 414-6600. ▪ The County will minimize adverse impacts to the California red-legged frog by limiting, to the maximum extent possible, the number of access routes, ground disturbance area, equipment staging, storage, parking, and stockpile areas. Prior to initiating maintenance work that involve ground-disturbing activities, equipment staging areas, site access routes, sediment removal and transportation equipment and personnel parking areas, debris storage areas, and any other areas that may be disturbed will be identified, surveyed by the qualified biologist, and clearly identified with fencing. The fencing will be inspected by the qualified biologist and maintained daily until the last day that equipment is at the site.

BMP Number	BMP Title	BMP Description
		▪ To the extent practicable, ground-disturbing activities will be avoided from October through April because that is the time period when California red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, the County will ensure that daily monitoring by the qualified biologist is completed for the California red-legged frog. ▪ If egg masses are present and work cannot be postponed until after hatching, a buffer of vegetation at least 10 feet in diameter shall be left around any egg masses found. Staff will keep a record of any sites where egg masses are found and will conduct vegetation removal at these sites between June 15 and October 15. Staff shall avoid entering the channel to avoid dislodging egg masses. Activities shall be performed from the banks. ▪ To minimize harassment, injury, death, and harm in the form of temporary habitat disturbances, all maintenance-related vehicle traffic will be restricted to established roads, sediment removal and access areas, equipment staging, storage, parking, and stockpile areas. These areas will be included in pre-activity surveys and, to the maximum extent possible, established in locations disturbed by previous activities to prevent further adverse impacts. Maintenance-related vehicles will observe a 20-mile per hour speed limit within work areas, except on County roads, and State and Federal highways. Off-road traffic outside of designated and fenced work areas will be prohibited. ▪ When a California red-legged frog is encountered in the work area, all activities which have the potential to result in the harassment, injury, or death of the individual will be immediately halted. The qualified biologist will then assess the situation in order to select a course of action that will avoid or minimize adverse impacts to the animal. To the maximum extent possible, contact with the frog will be avoided and the individual will be allowed to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog 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. ▪ California red-legged frogs that are in danger will be relocated and released by the qualified biologist outside the work area within the same riparian area or watershed. If relocation of the individual outside the work area is not feasible (i.e., there are too many individuals observed per day), the biologist will relocate the animals to a USFWS preapproved location. Prior to the initial ground disturbance, the County will obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is encountered and needs to be moved away from the work site. Under no circumstances will a California red-legged frog be released on a site unless the written permission of the landowner has been obtained by the County. The qualified biologist will limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. If the animal must be held in captivity, it will be kept in a cool, dark, moist, aerated environment, such as a clean and disinfected bucket or plastic container with a damp sponge.

BMP Number	BMP Title	BMP Description
		▪ The County will immediately notify the USFWS once the California red-legged frog and the site is secure. The USFWS contact for this situation is the Coast Bay Foothills Division Chief of the Endangered Species Program by email and at telephone (916) 414-6600. ▪ A litter control program will be instituted at each activity site. All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers will be removed from the site at the end of each working day. ▪ The County will comply with all herbicide application requirements mandated by the U.S. Environmental Protection Agency (USEPA) and stipulated injunctions pertaining to California red-legged frog. For example, herbicides will be limited for controlling state-designated invasive species and noxious weeds, will not be used within 15 feet of aquatic breeding critical habitat or non-breeding aquatic critical habitat areas or within 15 feet of aquatic features within non-critical habitat sections subject to the 2006 Court-ordered injunction; precipitation is not occurring or forecast to occur within 24 hours; herbicide is limited to localized spot treatment using hand-held devices; and herbicide will be applied by a certified applicator or person working under the direct supervision of a certified applicator. ▪ For on-site storage of pipes, conduits and other materials that could provide shelter for California red-legged frogs, materials will be securely capped prior to storage or an open-top trailer will 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. ▪ To the maximum extent practicable, no maintenance activities will occur during rain events or within 24-hours following a rain event. Prior to maintenance activities resuming, a qualified biologist will inspect the work area and all equipment/materials for the presence of California red-legged frogs. The animals will be allowed to move away from the work site of their own volition or moved by the qualified biologist. ▪ To the maximum extent practicable, night-time construction activities will be minimized or avoided by the County. Because dusk and dawn are often the times when the California red-legged frog most actively moving and foraging, to the maximum extent practicable, earthmoving and other project activities will cease no less than 30 minutes before sunset and will not begin again prior to 30 minutes after sunrise. Except when necessary for driver or pedestrian safety, to the maximum extent practicable, artificial lighting at a work site will be prohibited during the hours of darkness. ▪ Plastic monofilament netting (erosion control matting), loosely woven netting, or similar material in any form will not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site will be immediately removed by the qualified biologist, maintenance personnel, or County contractors. Materials utilizing fixed weaves (strands cannot move), polypropylene, polymer or other synthetic materials will not be used. ▪ Trenches or pits one (1) foot or deeper that are going to be left unfilled for more than forty-eight (48) hours will be securely covered with boards or other material to prevent the California red-legged frog from falling into them. If this is not possible, the County will ensure wooden ramps or other structures of suitable surface that provide adequate

BMP Number	BMP Title	BMP Description
		footing for the California red-legged frog 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 will be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog. The qualified biologist will inspect the trenches, pits, or holes prior to their being filled to ensure there are no California red-legged frogs in them. The trench, pit, or hole also will be examined by the qualified 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 qualified biologist will remove and transport it to a safe location, or contact the USFWS for guidance.
BIO-4	California Tiger Salamander Protection Measures	In the limited area in which the California tiger salamander might occur (i.e., in the vicinity of Alpine Trail), the measures described for California red-legged frog above will be implemented for California tiger salamander as well. In addition, the CDFW will be included in any agency coordination, as well as the USFWS, for issues involving the salamander.
BIO-5	San Francisco Garter Snake Protection Measures	In areas within one mile of a documented occurrence of the San Francisco garter snake, onsite habitat shall be evaluated by a qualified biologist or biological monitor for the potential to support this species. If suitable habitat for San Francisco garter snake is determined to exist in or around the work area where ground disturbing activities or mowing are planned to occur, the following measures will be followed: ▪ To the extent feasible, maintenance activities should be conducted from April through October during the dry season when these semi-aquatic species are less likely to be found in a work area. ▪ Prior to implementation of maintenance work, the County will submit to the USFWS and CDFW for its review and approval the qualifications of proposed wildlife biologist(s) who will perform pre-activity surveys and on-site monitoring. ▪ To avoid harassment, injury, death, and harm to individual San Francisco garter snakes, immediately prior to (i.e., the day of) the initiation of maintenance activities that have potential for take of the San Francisco garter snake, a USFWS and CDFW-approved biologist will conduct daytime surveys throughout the project site. The approved biologist will be present during initial ground-disturbing activities (i.e., clearing and grubbing) within 250 ft of the work area to monitor for individual garter snakes. The biologist will also be present during any other maintenance activities that could potentially result in take, as determined by the biologist taking into account all information gathered during the desktop audit of the site as well as the preconstruction survey. If a San Francisco garter snake is observed within the maintenance work area, either during the pre-activity survey or at any time, activities that could potentially harm the individual will cease and the USFWS and CDFW will be contacted immediately. Work will not re-commence without written approval from CDFW. The on-site biologist will be the contact for any employee or contractor who might inadvertently kill or injure a garter snake or anyone who finds a dead, injured, or entrapped San Francisco garter snake. The on-site biologist shall possess a working cellular telephone whose number shall be provided to the USFWS and CDFW.

BMP Number	BMP Title	BMP Description
		▪ For vegetation removal on berms or other sites with suitable San Francisco garter snake habitat, vegetation shall be cut down to 3 inches by handtools (weedwhacker, etc.). Once the ground is visible, a visual survey for San Francisco garter snakes shall be conducted. If no sensitive species are found in the area, removal of vegetation may continue by mowing or mechanized equipment very slowly with a biological monitor walking in front of the equipment to observe. ▪ Maintenance-related vehicles will observe a 20 mile per hour speed limit while in the work area. ▪ San Francisco garter snakes may be attracted to structures that provide cavities such as pipes; therefore, all pipes, culverts, or similar structures that are stored at the site for one or more overnight periods will be either securely capped prior to storage or thoroughly inspected by the on-site biologist and/or the maintenance foreman/manager before the pipe is buried, capped, or otherwise used or moved. If a San Francisco garter snake is discovered inside a pipe, the biologist (or a member of the maintenance crew, if the biologist is not on-site) will watch the individual until it has moved out of the maintenance work area. ▪ A litter control program will be instituted at each activity site. All workers will ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers will be removed from the site at the end of each working day.
BIO-6	Measures to Protect the Foothill Yellow-legged Frog, California Giant Salamander, and Western Pond Turtle	In areas within one mile of documented foothill yellow-legged frog, California giant salamander, Santa Cruz black salamander, or western pond turtle occurrences, or where suitable habitat for one or more of these species is determined to exist in or around the work area where ground disturbing activities or mowing are planned to occur, the County will implement applicable protection measures as follows: ▪ The qualified biologist will conduct a special-status species survey on each morning of and within 48 hours prior to the scheduled work commencing. 1. If no foothill yellow-legged frog, California giant Salamander, Santa Cruz black salamander, or western pond turtle is found, the work may proceed. 2. If eggs or larvae of the foothill yellow-legged frog, California giant salamander, Santa Cruz black salamander, are found, the qualified biologist will establish a buffer around the location of the eggs/larvae and work may proceed outside of the buffer zone. No work will occur within the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed, or the Permittee shall contact CDFW to develop site appropriate avoidance and minimization measures. 3. If an active western pond turtle nest is detected within the activity area, a 10-foot buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. 4. If adult or non-larval juvenile foothill yellow-legged frogs, California giant salamanders, Santa Cruz black salamanders, or western pond turtles are found, one of the following two procedures will be implemented:

BMP Number	BMP Title	BMP Description
		a. If, in the opinion of the qualified biologist, capture and removal of the individual to a safe place outside of the work area is less likely to result in adverse effects than leaving the individual in place and rescheduling the work (e.g., if the species could potentially hide and be missed during a follow-up survey), the individual will be captured and relocated by a qualified biologist to suitable habitat at least 100 m away and work may proceed. b. If, in the opinion of the qualified biologist, the individual is likely to leave the work area on its own, and work can be feasibly rescheduled, a buffer will be established around the location of the individual(s) and work may proceed outside of the buffer zone. No work will occur within the buffer zone until the turtle has left the work area. Work within the buffer zone will be rescheduled if necessary.
BIO-7	Check for Wildlife in Pipes/Construction Materials	For maintenance activities that involve pipes or culverts, the County will visually check all sections of pipe for the presence of wildlife sheltering within them prior to moving any pipe or culvert sections that have been stored on the site overnight, or the pipes will have the ends capped while stored on site so as to prevent wildlife from entering. After attachment of the pipe/culvert sections to one another, the exposed end(s) of the pipe/culvert will be capped at the end of each day during construction to prevent wildlife from entering and being trapped within the pipeline/culvert.
BIO-8	Minimize Impacts on Dusky-footed Woodrat Nests	If suitable habitat for San Francisco dusky-footed woodrat is determined to exist in the work area, the following measure will be followed: ▪ No more than two weeks prior to the beginning of ground disturbance or other routine maintenance activities that could disturb woodrat nests, a qualified biologist will survey the work areas scheduled for maintenance. If any dusky-footed woodrat nests are found, the nests shall be flagged and construction fencing or flagging that will not impede the movement of the SFDW shall be placed around the nest to create a 10-foot buffer (where feasible). If the nest is located adjacent to a road or trail, the nest shall be clearly flagged so equipment/truck drivers accessing sites can see the nest. If a dusky-footed woodrat nest is identified in a work area, the following measure will be implemented by the County. ▪ The County will avoid physical disturbance of the nest if feasible. Ideally, a minimum 10-foot buffer should be maintained between maintenance construction activities and each nest to avoid disturbance. In some situations, a smaller buffer may be allowed if in the opinion of a qualified biologist removing the nest would be a greater impact than that anticipated as a result of maintenance activities. ▪ If a dusky-footed woodrat nest cannot be avoided and the nest is located in urban or bayside areas where woodrat populations are small and isolated from larger populations, the County will consult with CDFW regarding the appropriate measures to minimize impacts. ▪ If a dusky-footed woodrat nest cannot be avoided and the nest is located in more rural or natural areas and/or where woodrat populations are large and have connectivity to large populations, one of the following two relocation measures will be implemented by the County:

BMP Number	BMP Title	BMP Description
		1. If the woodrat nest site and the proposed relocation area are connected by suitable dispersal habitat for the woodrat, as determined by a qualified biologist, the following relocation methodology will be used: Prior to the beginning of construction activities, a qualified biologist will disturb the woodrat nest to the degree that all woodrats leave the nest and seek refuge outside of the maintenance activity area. Relocations efforts will avoid the nesting season (February - July) to the maximum extent feasible. Disturbance of the woodrat nest will be initiated no earlier than one hour before dusk to minimize the exposure of woodrats to diurnal predators. Subsequently, the biologist will dismantle and relocate the nest material by hand. All material from dismantled nests will be placed in a pile, preferably against a log or tree trunk, in suitable habitat located at least 20 feet from, but otherwise as close as possible to, the original nest locations, to provide material for woodrats to construct new nests. During the deconstruction process, the biologist will attempt to assess if there are juveniles in the nest. If immobile juveniles are observed, the deconstruction process will be discontinued until a time when the biologist believes the juveniles will be fully mobile. A 10-foot wide no-disturbance buffer will be established around the nest until the juveniles are mobile. The nest may be dismantled once the biologist has determined that adverse impacts on the juveniles would not occur. All disturbances to woodrat nests will be documented in a construction monitoring report and submitted to CDFW. 2. If a qualified biologist determines that the woodrat relocation area is separated from the nest site by major impediments, or a complete barrier, to woodrat movement, trapping for woodrats will be conducted prior to relocation of nest material. Prior to the start of nest relocation activities, artificial pine box shelters will be placed at each of the sites selected for relocation of nest materials. The dimensions of the artificial shelters will be approximately 8” long x 8” wide x 6” high. Each shelter will include two interior chambers connected by an opening. At the relocation sites, the artificial pine box shelters will provide basement structures for the relocated woodrat nest materials, allowing woodrats to enter, use, and modify the relocated nests. ▪ A qualified biologist will set two traps around each of the woodrat nests to be relocated. Traps will be set within one hour prior to sunset, and baited with a mixture of peanut butter, oats, and apples. Traps will also be equipped with cotton bedding and covered with cardboard. The traps will be checked the following morning, within one-and-a-half hours of sunrise. If a woodrat is captured it will be placed in a quiet area while its nest material is relocated; the animal will then be released at the relocated nest. If no woodrats are captured after the first night, the biologist will set the traps for one additional evening to increase the probability of capturing the animal and ensuring a safe relocation. If no woodrats are captured at a given house after two nights, it will be assumed that the house is not currently occupied. Trapping will only be conducted outside the breeding season, which for woodrats is from February through the end of July. If a litter of young is found or suspected while dismantling a nest for relocation, the nest material will be replaced, any trapped woodrats will be returned to the nest, and the nest will be left alone for 2 to 3 weeks, after which time the nest

BMP Number	BMP Title	BMP Description
		would be rechecked to verify that the young are capable of independent survival, as determined by the lead woodrat biologist, before proceeding with nest dismantling.
BIO-9	Measures to Protect Nesting Migratory Birds	▪ To the extent possible, conduct vegetation removal activities prior to nesting bird season (February 1 through August 31). ▪ For maintenance activities or tree removal that are scheduled to occur between February 1 and August 31, a qualified biologist will survey the work area and a minimum of 300 feet surrounding the work area for raptor nests and 100 feet for nests of non-raptors. This survey will occur no more than three days prior to starting work. If a lapse in maintenance-related work of 7 days or longer occurs, another focused survey will be conducted before maintenance work can be reinitiated. ▪ If nesting birds are found, a no-work buffer will be established around the nest and maintained until the young have fledged. A qualified biologist will identify an appropriate buffer based on a site specific-evaluation. Typical appropriate buffers are 300 feet for raptors, herons, and egrets (though larger for bald and golden eagles, as discussed in BIO-14); 100 feet for non-raptors nesting on trees, shrubs and structures, and 25 feet for ground-nesting non-raptors. ▪ The boundary of each buffer zone will be marked with fencing, flagging, or other easily identifiable marking if work will occur immediately outside the buffer zone. ▪ Install physical barriers to nesting where appropriate (e.g., install netting over entryways to cavities, bridge ledges, culverts) and check regularly for any trapped birds. Work will not commence within the buffer until fledglings are fully mobile and no longer reliant upon the nest or parental care for survival. ▪ No trees or shrubs shall be disturbed that contain active bird nests until all eggs have hatched, and young have fully fledged (are no longer being fed by the adults and have completely left the nest site). To avoid potential impacts to tree or shrub-nesting birds, any project-specific trimming or pruning of trees or shrubs shall be conducted during the time period of September 1 to February 14 unless a preconstruction nesting bird survey has been conducted by a qualified biologist. No habitat removal or modification shall occur within the Ecologically Sensitive Area fenced nest zone even if the nest continues to be active beyond the typical nesting season for the species, until the young have fully fledged and will no longer be adversely affected by the project. ▪ Within areas subject to CDFW regulation under Section 1600 of the Fish and Game Code, nesting bird protection measures required as conditions of the Streambed Alteration Agreement will be implemented.
BIO-10	Measures to Protect Nesting Marbled Murrelet	▪ During marbled murrelet breeding/nesting season (March 24 to September 15), if suitable marbled murrelet nesting trees are present within 300 feet of the project area or if a marbled murrelet nest is detected, Permittee shall consult with CDFW before proceeding. If habitat trees are present within ¼- mile of the project site but are greater than 300 feet from the work area, Permittee may proceed with the following conditions: o Work within the ¼-mile buffer shall be confined to the period of September 15 to October 15.

BMP Number	BMP Title	BMP Description
		o If activities cannot be performed during this window and would thus occur during the marbled murrelet breeding season (March 25 to September 15), seasonal disturbance minimization buffers as listed the USFWS document, *Estimation of the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California* (2006) shall be followed. Permittee shall measure ambient noise and estimate construction activity noise to calculate seasonal buffer widths using that reference.Alternatively, if protocol-level surveys are conducted and do not indicate that the habitat is occupied by marbled murrelet, seasonal and distance work restrictions may be lifted with written approval from CDFW. Protocol level survey procedures and information can be found at: http://www.pacificseabirdgroup.org/publications/PSG_TechPub2_MAMU_ISP.pdf
BIO-11	Non-native Aquatic Plant Removal	Any aquatic non-native plants found while performing maintenance activities will be disposed of properly and will not be placed back into the tributaries where work is being conducted or any other drainages, creeks, or streams.
BIO-12	Measures to Protect Special-Status Butterflies	If suitable habitat for Bay checkerspot, Mission blue, San Bruno elfin, or Callippe silverspot butterflies is determined to exist in or around the work area where ground disturbing activities are planned to occur, the County will implement applicable protection measures as follows: ▪ Areas supporting larval host plants for the Bay checkerspot, Mission blue, San Bruno elfin, or Callippe silverspot will be identified by a qualified biologist and protected from disturbance by establishing buffer zones around individual plants or populations. The size of the buffer will be determined by a qualified botanist; the actual distance will depend on the plant species potentially affected and the type of disturbance. If impacts on larval host plants of federally listed butterflies are unavoidable and are within occupied or potentially occupied habitats, then the County will stop work in the vicinity of the host plant(s) and consult with the USFWS. ▪ No herbicide will be applied to the buffer area, and to the extent feasible, maintenance personnel and equipment will not operate within such areas. If, based on a review of current California Natural Diversity Database (CNDDB) records or the latest information available from the Xerces Society (https://xerces.org/state-of-the-monarch-butterfly-overwintering-sites-in-california/) historically or currently occupied overwintering habitat for the monarch butterfly is determined to exist in or adjacent to the work area where ground disturbing activities are planned to occur, the County will implement applicable protection measures as follows: ▪ Areas supporting overwintering habitat for the monarch butterfly will be identified by a qualified biologist and maintenance activities during fall and winter months when monarch butterflies are present will be avoided to the extent practicable. ▪ Historically or currently occupied trees/groves will be protected from disturbance by the establishment of a 100-foot buffer zone around the tree/grove. The buffer will be measured from the outside edge of the dripline of the monarch

BMP Number	BMP Title	BMP Description
		grove. If maintenance activities within 100 feet of a historically or currently occupied tree/grove are unavoidable, the County will prepare and implement an impact minimization plan in consultation with the USFWS. ▪ No herbicides or pesticides will be applied to the buffer area, and to the extent feasible, maintenance personnel and equipment will not operate within such areas.
BIO-13	Measures to Protect the California Ridgway's Rail	suitable breeding habitat for California Ridgway's rails is determined to exist in or around the work area where maintenance activities are planned to occur, the County will implement applicable protection measures as follows: ▪ If work will occur during the Ridgway's rail breeding season (February 1 through August 31), the County will conduct pre-activity surveys for the Ridgway's rail in the late winter and early spring of the year maintenance activities are scheduled to occur. Surveys will be conducted per the current USFWS protocol. ▪ If the surveys confirm there are no breeding rails within 700 feet of the project area, or the area where heavy equipment, ground disturbance, or vegetation removal would occur, work activities may proceed during the breeding season. ▪ If surveys identify the presence of breeding rails, no maintenance activities will occur within 700 feet of occupied nesting habitat during the breeding season (February 1 to August 31). For work occurring within 300 feet of potential nonbreeding habitat for California Ridgway's rails which provides habitat that occasional nonbreeding California Ridgway's rails may use for foraging or cover, or other identified suitable California Ridgway's rail habitat locations, the County will implement applicable protection measures as follows: ▪ Prior to the initiation of work each day, if suitable habitat occurs within the immediate work area, a qualified biologist will conduct a preconstruction survey of all suitable habitat that may be directly or indirectly impacted by the day's activities (work area, access routes, staging areas). Specific habitat areas are vegetated areas of cordgrass (*Spartina* spp.), marsh gumplant (*Grindelia* spp.), pickleweed (*Salicornia pacifica*), alkali heath, (*Frankenia* sp.), and other high marsh vegetation, brackish marsh reaches of creek with heavy accumulations of bulrush thatch (old stands), and high water refugia habitat that may include annual grasses, and shrubs immediately adjacent to channels. ▪ If during the initial daily survey or during work activities a Ridgway's rail is observed within or immediately adjacent to the work area (50 feet), initiation of work will be delayed until the Ridgway's rail leaves the work area. ▪ Mowing using heavy equipment (e.g., tractors, boom mowers, or rider mowers) will not be conducted in habitat areas or within 50 feet of habitat areas. If mowing with hand equipment is necessary within 50 feet of habitat areas, an on-site monitor will observe the area in front of the mower from a safe vantage point while it is in operation. If Ridgway's rails are detected within the area to be mown, the mowing will stop until the individual(s) have left the work area. ▪ If visual observation cannot confirm the Ridgway's rail(s) left the work area, then it is assumed that the individual(s) remains in the work area and the work will not resume until the area has been thoroughly surveyed (and absence confirmed) or the USFWS has been contacted for guidance.

BMP Number	BMP Title	BMP Description
BIO-14	Measures to Protect Bat Colonies	▪ If high-quality habitat for roosting bats (i.e., large trees with cavities of sufficient size to support roosting bats, or buildings providing suitable roost sites, as determined by a qualified bat biologist) is present within 100 feet of a maintenance site, a qualified bat biologist will conduct a survey to look for evidence of bat use within two weeks prior to the onset of work activities. If evidence of bat occupancy is observed, or if high-quality roost sites are present in areas where evidence of bat use might not be detectable (such as a tree cavity), an evening survey and/or nocturnal acoustic survey may be necessary to determine if a bat colony is present and to identify the specific location of the bat colony. ▪ If no active maternity colony or non-breeding bat roost is located, project work can continue as planned. ▪ If an active maternity colony or non-breeding bat roost is located, the project work will be redesigned to avoid disturbance of the roosts, if feasible. ▪ If an active maternity colony is located, and the project cannot be redesigned to avoid removal or disturbance of the occupied tree or structure, disturbance will not take place during the maternity season (March 15 – July 31), and a disturbance-free buffer zone (determined by a qualified bat biologist) will be observed during this period. ▪ If an active non-breeding bat roost is located, and the project cannot be redesigned to avoid removal or disturbance of the occupied tree or structure, the individuals will be safely evicted between August 1 and October 15 or between February 15 and March 15 (as determined by a Memorandum of Understanding with CDFW). Bats may be evicted through exclusion after notifying CDFW. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during the darker hours.
BIO-15	Nesting Bald Eagle and Golden Eagle Avoidance	In areas within 0.5 mile of known bald or golden eagle nesting areas, the following measures will be implemented: ▪ To the extent feasible, conduct vegetation removal activities prior to the nesting season (January 15 through August 1). ▪ For maintenance activities or tree removal that are scheduled to occur between January 15 and August 1, a qualified biologist will survey the work area and a minimum 0.5 mile surrounding the work area for eagle nests. This survey will occur no more than seven days prior to starting work. No maintenance activities will occur within a 0.5-mile viewshed buffer zone (areas that can be seen by an eagle on the nest), around any active eagle nest during the breeding season, unless a qualified biologist determines late in the season that nesting activity has been completed for the year. No breeding-season maintenance activities will occur within 0.25 mile of the nest site a, regardless of whether or not those activities can be seen from the nest, while nesting activity is occurring.
BIO-16	Avoid Special-Status Plant Species	▪ For projects located in areas where special-status plants have been identified as potentially occurring (see Table 4-1), a qualified biologist will assess habitat suitability for the potential occurrence of special-status plant species within the work area. If determined to be warranted, a qualified botanist will conduct appropriately timed surveys for the focal

BMP Number	BMP Title	BMP Description
		plant species in accordance with CDFW's special-status plant survey methodology. If a special-status species is observed in or near the project site, the County will follow the measures below as well as any additional measures that might be contained in the forthcoming Biological Opinion issued by the USFWS for the Maintenance Program. ▪ If discovered, the population size and occupied area of special-status plant populations identified during the field survey, and with potential to be impacted, will be estimated. A "population" will be defined as the group of individuals of a species present within a 0.10-mile radius. In addition, the population will be photographed and flagged to maximize avoidance, as well as to estimate the percentage of the population affected. If feasible, the project shall be redesigned or modified to avoid direct and indirect impacts on special-status plant species. ▪ Special-status plants to be avoided will be protected from disturbance by installing environmentally sensitive area fencing (orange construction barrier fencing or a suitable alternative). Protective fencing will be installed under the direction of a qualified biologist as necessary to protect the plant and its habitat; where feasible, the environmentally sensitive area fencing will be installed at least 50 ft from the edge of the population. The location of the fencing will be shown on the maintenance design drawings and marked in the field with stakes and/or flagging. The design specifications will contain clear language that prohibits maintenance-relate activities, vehicle operation, material and equipment storage, and other surface disturbing activities within the fenced environmentally sensitive area. For non-ground disturbing vegetation management activities conducted using only hand-held equipment, the non-disturbance buffer may be reduced to a minimum of 3 feet and flagging of the population may be used in place of environmentally sensitive fencing. ▪ Vegetation management activities in sensitive plant areas will be conducted under the guidance of a qualified botanist. These activities will be timed following the blooming periods of potentially occurring listed species. ▪ If any impacts to individual state-listed plants are unavoidable, or if more than 5 percent of a population of a federally listed plant species or species with California Rare Plant Ranks of 1 or 2 would be impacted percent, then the County will stop work in the vicinity of the plant(s) and consult with the appropriate regulatory agencies. ▪ If impacts to state or federally listed plants are unavoidable and less than 5 percent of a population would be impacted, prior to any ground-disturbing activities the County will preserve the seedbank within the impact area by removing and retaining the topsoil prior to the implementation of maintenance activities. Following completion of the maintenance activity, the County will monitor the impact area for two years. Any non-native invasive plant species occurring within this area during the monitoring period will be removed under the supervision of a qualified biologist. ▪ If appropriately timed focused botanical surveys cannot be conducted prior to maintenance activities in areas identified by a qualified biologist as potentially supporting listed plants, then the County will assume presence of the plant species in question.

BMP Number	BMP Title	BMP Description
BIO-17	Sudden Oak Death Controls	▪ Before entering maintenance sites located in areas infested with *Phytophthora*, field workers will receive training that includes information on *Phytophthora* pathogens and how to prevent the spread of these and other soil-borne organisms by following approved phytosanitary procedures. ▪ The exterior and interior of all vehicles, construction equipment, and tools should be clean and free of debris, soil and mud (including mud on tires, treads, wheel wells and undercarriage) prior to arrival at a new job site, especially during the wet season. ▪ Work shoes should be kept clean by inspecting shoe soles and removing mud, debris and soil off treads before moving to a new job site. ▪ Do not collect or transport host plants from an infested or quarantined area. ▪ Vehicles should stay on established roads whenever possible. ▪ To minimize the potential for spreading potentially contaminated soil and time required for decontamination, if possible, avoid vehicle traffic and field work when soils are wet enough to stick readily to shoes, tools, equipment and tires. ▪ Delivered nursery plants that will be held before planting will be transferred to cleaned and sanitized raised benches and maintained in accordance with the "Guidelines to Minimize *Phytophthora* Pathogens for holding (non-production) nurseries at restoration sites, Section 3." ▪ A portion of purchased nursery plants will be tested for *Phytophthora* using the pear-baiting methodology in which pear baits are placed in soil samples, water samples and root samples of nursery purchased plants. Incubation temperatures with diurnal fluctuations from 21 degrees Celsius to 27 degrees Celsius are generally suitable for detecting *Phytophthora* species using pear baits. If dark lesions appear on pears, the sample likely has *Phytophthora* inoculum. For additional information for the pear-baiting methodology, see: phytosphere.com/BMPsnursery/test3_2bait.htm ▪ Nursery plants will be transported on or in vehicles or equipment that have been cleaned before loading the stock. ▪ Nursery stock will not be placed on the soil or other potentially contaminated surfaces until they are placed at their specific planting sites. ▪ Minimize unnecessary movement of soil and plant material within a planting area, especially from higher to lower risk areas. ▪ On-site or off-site collection of plant materials, including seed and cuttings for direct planting, will be conducted in a phytosanitary manner. Only uncontaminated water or water that has been effectively treated to remove or kill *Phytophthora* should be used for rinsing or irrigating plant material.

BMP Number	BMP Title	BMP Description
BIO-18	Invasive Plant Control	▪ In order to minimize the spread of invasive plants, all equipment (including personal gear) will be cleaned of soil, seeds, and plant material prior to arriving on the project site to prevent introduction of undesirable plant species. ▪ Prior to implementation of Program activities at a given site, the proposed staging area, as well as any areas to be graded, will be surveyed for the presence of invasive weed species. Invasive weed species occurring within locations of construction clearing and grubbing shall be flagged for removal by the biological monitor or qualified biologist. Any invasive weeds with a Cal-IPC rating of "moderate" or "high" found within the survey area will be removed and disposed of in a sanitary landfill, incinerated off-site, or disposed in a high-temperature composting facility that can compost using methods known to kill weed seeds, taking care to prevent any seed dispersal during the process by bagging material or covering trucks transporting such material from the site. ▪ Suitable onsite disposal areas should be identified to prevent the spread of weed seeds. Invasive plant material should be rendered nonviable (partially decomposed, very slimy or brittle) when being treated onsite. Maintenance staff shall desiccate or decompose invasive plant material until it is nonviable. Depending on the type of plant, disposed plant material can be left out in the open as long as roots are not in contact with moist soil, or can be covered with a tarp to prevent material from blowing or washing away. Permittee shall monitor all sites where invasive plant material is disposed onsite and treat any newly emerged invasive plants. Invasive plant material removed during work activities shall be bagged and appropriately incinerated or disposed of in a landfill or permitted composting facility. ▪ No invasive plants shall be planted at maintenance work areas. Prohibited exotic plant species include those identified in the California Invasive Plant Council's Inventory Database, which is accessible at: https://www.cal-ipc.org/plants/inventory/.
BIO-19	Restore Channel Features	Following completion of bank stabilization activities, any temporary modifications to the low-flow channels will be reversed so that the channel is contoured to facilitate fish passage at least as well following the activity as it did prior to the stabilization activity.
BIO-20	Avoidance of Mammal Pupping Sites	Work within 250 feet of an active harbor seal or sea lion haul out will be conducted outside of the pupping season (i.e., June – February).
BIO-21	General Wildlife Protection Measures	If any wildlife is encountered during project activities, said wildlife shall be allowed to leave the area unharmed and on their own volition, except in cases where relocation by a qualified biologist is permitted by conditions below.
BIO-22	Measures to Protect Nesting Western Snowy Plover	▪ To the extent feasible, maintenance activities within 600 feet of suitable snowy plover breeding habitat will occur outside the plover breeding season of March 1 through September 14. ▪ If maintenance activities are scheduled to occur within 600 feet of suitable snowy plover breeding habitat during the nesting season (March 1 through September 14), a pre-activity survey will be conducted by a qualified biologist within 7 days prior to the start of the activity to determine whether active nests are present.

BMP Number	BMP Title	BMP Description
		▪ If an active snowy plover nest is detected within 600 feet of maintenance areas, the qualified biologist, in coordination with USFWS personnel, will determine an appropriate buffer that should remain free from new activities (i.e., those that were not ongoing when the nest was established). The buffer will be determined taking into account visual barriers (such as dunes) between the activities and the nest and the level and proximity of human activity around the nest when it was established. The buffer will remain in place until the nest is no longer active. ▪ If broods of unfledged snowy plover young are present, no maintenance activities will occur within 300 feet (or as otherwise determined by a qualified biologist in coordination with the USFWS) of a brood.
BIO-23	Burn Pile Measures	▪ The County would coordinate burn pile activities with CAL FIRE. ▪ Burning will only occur on days when danger of wildfire is low (e.g., it will not occur on windy days or in very hot, dry conditions). ▪ No burn piles will be located within 200 feet of known occurrences of special-status plants, suitable habitat for special-status butterflies and their hostplants, or high-quality aquatic or wetland habitat for the California red-legged frog, California tiger salamander, or San Francisco garter snake. ▪ Prior to the initiation of burning, the burn pile will be physically disturbed (e.g., with a stick or shovel) to encourage any animals taking refuge within the pile to move out of the pile.
BIO-24	Pathogen Control	▪ In order to minimize the spread of plant and animal pathogens, all equipment (including personal gear such as boots) will be cleaned of soil, seeds, and plant material prior to arriving on a maintenance site. All organic matter will be removed from nets, traps, boots, vehicle tires and all other surfaces that have come into contact with water or potentially contaminated sediments. ▪ Equipment, including maintenance equipment and field gear used to capture and relocate special-status species such as frogs, will be disinfected after exiting one aquatic habitat and before entering the next aquatic habitat, unless the waters are hydrologically connected to one another. Cleaning equipment in the immediate vicinity of aquatic habitats will be avoided (e.g., clean in an area at least 100 feet from aquatic features). ▪ Boots, nets, gloves, and any other equipment used to handle amphibians or aquatic organisms will be scrubbed with a bleach solution (0.5 to 1.0 cup per 1.0 gallon of water), Quat-128™ (1:60), or a 3 to 6 percent sodium hypochlorite solution and thoroughly rinsed clean with water between maintenance sites. Care will be taken so that all traces of the disinfectant are removed before entering the next aquatic habitat. ▪ When working at sites with known or suspected disease problems, disposable gloves will be worn and changed between handling each animal. Gloves will be wetted with water from the site or distilled water prior to handling any amphibians. Gloves will be removed by turning inside out with hands cleaned using a hand cleaner and water rinse to minimize cross-contamination.

Chapter 3
Environmental Setting, Impacts, and Mitigation Measures

3.1 OVERVIEW

Sections 3.2 through 3.16 of this chapter describe the environmental resources and potential environmental impacts of the County of San Mateo Routine Maintenance Program (proposed program). Each section describes the existing environmental setting and background information for a particular resource topic to help the reader understand the conditions that could be affected by the program. In addition, each section in Chapter 3 includes a discussion of the criteria used to determine the significance levels of the proposed program's environmental impacts. If appropriate, mitigation measures are identified to reduce, where possible, the adverse effects of significant impacts.

Applicable local plans, policies, regulations and ordinances are presented in Appendix C.

3.1.1 SIGNIFICANCE OF ENVIRONMENTAL IMPACTS

According to the California Environmental Quality Act (CEQA) statutes and guidelines, an environmental impact report (EIR) should define the threshold of significance and explain the criteria used to determine whether an impact is above or below that threshold. For each environmental resource topic, significance criteria are identified to determine whether implementation of the proposed program would result in a significant environmental impact when evaluated against the baseline condition, as described in the environmental setting. The significance criteria vary depending on the environmental resource topic. In general, effects can be either significant or potentially significant (exceed the threshold) or less than significant (do not exceed the threshold). In some cases, a significant impact will be identified as significant and unavoidable if no feasible mitigation measures are available that would reduce the impact to a less-than-significant level. If a project is subsequently adopted despite identified significant impacts that would result from the project, CEQA requires the lead agency to prepare and adopt a statement of overriding considerations describing the social, economic, and other reasons for moving forward with the project despite its significant impacts.

3.1.2 FORMAT OF IMPACT TITLES

Impact titles are formatted to summarize information about the impact, as follows:

Impact TOPIC- #: Impact Title (Impact Conclusion)

These terms are further described as follows:

- **TOPIC:** an abbreviation of the resource topic to which the impact applies (e.g., AES for aesthetics). The reader can determine the impact's resource topic by reading the impact title.
- **#:** impacts are sequentially numbered
- **Impact Title:** provides a brief text description of the impact. The reader can determine the specific issue that the impact discussion is addressing.
- **Impact Conclusion:** identifies the level of impact, with the five possibilities being No Impact, Less than Significant, Less than Significant with Mitigation, Significant and Unavoidable, or Beneficial. The reader can determine the impact's significance by reading the impact title.

3.1.3 BASELINE CONDITIONS

Under CEQA, the environmental setting or "baseline" serves as a gauge to assess changes to existing physical conditions that would occur as a result of a proposed project. According to State CEQA Guidelines (Cal. Code Regs., tit. 14, Section 15125), for purposes of an EIR, the environmental setting is generally the existing physical conditions at the project site or in the project area at the time the Notice of Preparation (NOP) is published. While recent changes in the CEQA guidelines have enabled the alternative use of a future projected or historic baseline; such alternative baselines are for unique situations. In the case of the proposed program, the standard approach for the baseline to be the existing conditions at the time of the NOP is the most appropriate baseline.

It is important to note that certain activities that are part of the proposed program have been undertaken on an ongoing basis for some time. As such, these activities are considered a part of the baseline condition. While the type and number of maintenance sites addressed by the San Mateo County (County) varies year to year, for the purposes of this EIR, **Table 3.1-1** summarizes the types of maintenance activities that have been routinely conducted by Department of Public Works (DPW) and the Parks Department in past years and summarizes the baseline set of activities that have historically occurred in a typical year.

Table 3.1-1. Maintenance Activities and Projects Historically Conducted by County under Baseline Conditions

Maintenance Activity Type	Number of Maintenance Projects/Year or Days/Year
Culvert Replacement	8 projects/year
DPW Minor Bridge Repair	1 project/year
DPW Major Bridge Maintenance	1 project/year
Bridge Maintenance (in County Park)	1 project/year
Roadside Ditch and Swale Maintenance	140 days/year
Sediment Removal	2 projects/year
Bank Stabilization	5 projects/year
Vegetation Management	184 days/year
Rock Slope Protection Maintenance	1 project/year
Reconstruction of Paved Roads	15 days/year

Maintenance Activity Type	Number of Maintenance Projects/Year or Days/Year
Surface Treatment of Paved Roads	128 days/year
Unpaved Road/Trail Maintenance	25 projects/year
Marina Maintenance Activities	1 project/year

The impact analysis in this draft environmental impact report (DEIR) focuses on new, additional, or different activities from the past activities that represent the baseline condition. Thus, the DEIR focuses on the incremental change or effects to baseline conditions resulting from the proposed program.

3.1.4 SECTIONS ELIMINATED FROM FURTHER ANALYSIS

Three resource topics have been eliminated from further analysis based on the nature and scope of the proposed program activities. A brief summary and description of these resource topics dismissed from further review is provided below.

Agricultural and Forestry Resources

The program area primarily consists of land designated as "urban and built-up," "other land," and "grazing." While there are several small areas in the program area, primarily located along the County areas draining to the Pacific Ocean (Coastside) that are designated as "Farmland of Local Importance," "Unique Farmland," Farmland of Statewide Importance," and "Prime Farmland" (California Department of Conservation [CDOC] 2018) these areas are not significantly affected by the proposed program. In addition, the majority of the program area consists of non-Williamson Act contract land, either non-enrolled or urban and built-up. However, large areas of Williamson Act contract lands are located along the Coastside, especially around San Gregorio and a few small areas are located in the County areas draining to San Francisco Bay (Bayside) associated with salt ponds and tidal marsh (CDOC 2012). Further, a majority of the unincorporated County areas along the coast from south of Pacifica to the Santa Cruz County boundary is zoned as Planned Agricultural District (San Mato County Planning and Building Department 2019). The Planned Agricultural District designation protects prime agricultural land and aims to preserve existing and potential agricultural operations within the County (County of San Mateo Planning and Building Department 2018). Portions of the County in the Central and South Coastside areas within the Santa Cruz Mountains are also zoned as timberland preserves (San Mateo County 2019).

In the event that maintenance activities occur on lands designated as farmland, Williamson Act contract land, or land zoned for agricultural or timberland use, maintenance activities would be primarily confined to existing culverts, channels, bridges, flood control facilities, roads and trails, marina facilities, and vegetation near these facilities. Fuel management activities (e.g. selective tree thinning, removal of undergrowth and secondary tree growth) would also be conducted along County Park boundaries where adjacent properties could be at risk. Thus, the proposed program would not convert farmland or timberland to non-agricultural or non-timberland uses, nor would they conflict with existing agricultural zoning regulations or Williamson Act contracts. As such, no impact on agricultural or forestry uses would occur.

Mineral Resources

Proposed maintenance activities would not take place in areas that have any mineral, oil, or gas-resource production designation, capability, or activity. According to CDOC's Division of Mines and Geology, most of the program area is classified as Mineral Resources Zone-1 (MRZ-1). MRZ-1 are areas where adequate information indicates that no significant mineral deposits are present, or where there is little likelihood for mineral resources to be present. Several portions of the County along the Coastside (from Montara to Miramontes Point) and on the Bayside (west of Foster City and Redwood City) are classified as MRZ-3. MRZ-3 are areas of undetermined mineral resource potential (CDOC 1983). Although there is a possibility that maintenance activities could occur within areas of unknown mineral resources, the program would not involve any activities or acquire land that could directly affect the availability of a mineral resource. Ground-disturbing activities conducted under the proposed program would be limited to bank stabilization/slip-out road repairs; culvert repair or replacement; and sediment removal from existing channels, bridge or culverts. None of these activities would involve dredging of substantial volumes of soil that could affect the availability of a mineral resource. Therefore, no impact on mineral resources would occur.

Population and Housing

The proposed program would not involve the construction of new housing or generate any long-term employment opportunities that could cause substantial population growth. Maintenance activities would be conducted by existing County employees or contracted workers who would be employed temporarily in the program area. Because these jobs would likely be filled by the local work force, the program would not directly induce population growth related to new long-term employment opportunities. Further, the program would not result in the construction of new roads or trails, or flood control facilities that would indirectly induce population growth; the program would entail maintenance of existing facilities.

Furthermore, the proposed maintenance activities would be confined to existing culverts, channels, bridges, flood control facilities, roads and trails, marina facilities, and the vegetation near these facilities. Although residences are located near some facilities, no residents would be displaced by the proposed program, either temporarily or permanently. Therefore, the proposed program would not displace existing housing or people, such that replacement housing would be needed elsewhere. As such, no impacts related to housing displacement would occur.

3.2 Aesthetics

This section addresses the existing visual resources within the area potentially affected by the County of San Mateo Routine Maintenance Program (proposed program) and the pertinent local and state plans and policies related to the protection of visual and scenic resources. This section evaluates the potential effects of the proposed program on aesthetic resources, including views from designated scenic highways, scenic areas, and public view corridors.

3.2.1 Environmental Setting

DEFINITIONS

Visual character, *visual quality*, and *visual sensitivity* are three terms used throughout this section.

- Visual character is the unique set of landscape features that combine to make a view, including native landforms, water, and vegetation patterns, as well as built features such as buildings, roads, and other structures.
- Visual quality is the intrinsic appeal of a landscape or scene due to the combination of natural and built features in the landscape. Natural and built features combine to form unique perspectives with varying degrees of visual quality, which is rated in this analysis as high, moderate, or low.
- Visual sensitivity reflects the level of interest or concern that viewers and responsible land management agencies have for a particular visual resource with visual quality taken into account. Visual sensitivity is a measure of how noticeable proposed changes might be in a particular setting and from a particular location; it is determined based on the distance from a viewer, the contrast of the proposed changes, and the duration that a particular view would be available to viewers. For example, areas such as scenic vistas, parks, trails, and scenic roadways typically have a high visual quality and visual sensitivity because these locales are publicly protected, appear natural, have view durations that are typically long, and have close-up views that are more commonly available.

Additionally, California Environmental Quality Act (CEQA) statutes and guidelines specifically reference the term *scenic vistas*. Scenic vistas are specific views with high visual quality that are available from public vantage points such as lookout points or ridgeline trails.

REGIONAL VISUAL CHARACTER

As described in Chapter 2, *Project Description,* the program area generally consists of two physiographic regions which are divided by the Santa Cruz Mountains. The Bayside of the program area (County areas draining to the San Francisco Bay) is highly urbanized whereas the Coastside (County areas draining to the Pacific Ocean) is largely undeveloped and comprised of a combination of mountainous areas, coastal beaches, and rural land uses. For the purposes of this discussion, San Mateo County's visual character is described by these two

physiographic regions. Although the following sections describe the visual character of the overall Bayside and Coastside regions, it is important to note that except for County parks, the majority of proposed program activities would occur in unincorporated areas of San Mateo County.

BAYSIDE

The northern portion of the Bayside region (North Bayside) extends from the San Francisco County line down to city of San Mateo and includes the cities of South San Francisco, San Bruno, Millbrae, Burlingame, Hillsborough. The area west of Interstate 280 (I-280) is largely undeveloped consisting of San Andreas Lake and Lower Crystal Springs Reservoir, and surrounding forested watershed lands owned by the City and County of San Francisco. Land uses to the east of I-280 are mostly urbanized. The North Bayside includes pockets of urban development such as unincorporated Colma and hilly residential development in unincorporated areas such as Burlingame Hills (north of Town of Hillsborough) and San Mateo Highlands (east of Lower Crystal Springs Reservoir and north of SR 92). The eastern portion of North Bayside is also characterized by the Bay frontage and shoreline. The San Francisco International Airport is also a notable feature to the east of U.S. Highway 101 and San Bruno. The topography of this region is characterized by rolling foothills and the bay plain in the north, San Bruno Mountain, and the Santa Cruz Mountains which forms a series of moderate, northwest trending ridges and valleys. As shown in Figure 2-2, aside from San Bruno Mountain State and County Park, other County Park facilities in this region include Coyote Point Recreation Area, Junipero Serra County Park, and Crystal Springs Trail. This region's visual character is generally defined by the combination of urban development to the east and mountainous forested watershed lands to the east of San Andreas Lake and Upper and Lower Crystal Springs reservoirs.

The southeastern portion of San Mateo County (South Bayside) generally extends from the city of San Mateo (roughly near State Route [SR] 92) to the Santa Clara County boundary, and east of Skyline Boulevard (SR 35) to the San Francisco Bay (Figure 2-3). The topography of the eastern portion is generally flat and highly developed including the cities of San Mateo, Redwood City, Belmont, San Carlos, and Menlo Park. The San Francisco Bay shoreline supports an elaborate system of sloughs, estuarine marshes, and salt ponds. To the west of U.S. Highway 101 and I-280, the topography includes more rolling foothills that extend up to the Santa Cruz Mountains. Land uses are generally occupied with residential and mixed urban development. The northwestern portion of this region, west of I-280, remains largely undeveloped and includes the Upper Crystal Springs Reservoir and forested watershed lands. County Parks Department facilities in this region include Edgewood County Park and Natural Reserve, Huddart County Park, Wunderlich County Park, Friendship Park, Flood County Park, Alpine Trail, and Crystal Springs Regional Trail. This region's visual character is defined by the combination of undeveloped watershed lands, urban development, highways, and sloughs and estuarine habitat along the Bay shoreline.

With regards to the County's unincorporated areas in South Bayside, Harbor Industrial is a small area along Harbor Boulevard to the east of El Camino Real and west of U.S. Highway 101 that is characterized by industrial and urban development. North Fair Oaks (adjacent to Redwood City, Atherton and Menlo Park) and West Menlo Park are also characterized by urban and residential development in the mostly flat portion of the South Bayside. In contrast, hilly residential development is characteristic of the Emerald Lake Hills (east of Edgewood Park) and Devonshire (west of San Carlos) neighborhoods in San Mateo County.

COASTSIDE

The northern portion of the Coastside (North Coastside) is a relatively narrow area along the Pacific coast from the San Francisco/San Mateo County border south to Half Moon Bay (Figure 2-4). The Santa Cruz Mountains traverse the southeastern portion of this region in a northwest fashion. Montara Mountain is the most prominent topographical feature in this region, which generally separates the Linda Mar community to the north, and Montara and Moss Beach to the south. Much of the coastal topography is steep with watershed headlands dropping quickly to the coast. The main urbanized areas of the North Coastside is the city of Pacifica and unincorporated communities of Broadmoor (near Daly City), Montara, Moss Beach, and El Granada. County Park facilities in this region include Devil's Slide Trail, Sanchez Adobe County Park, San Pedro Valley County Park, Moss Beach, James V. Fitzgerald Marine Reserve, Pillar Point Bluff, Mirada Surf West, Mirada Surf East, and Quarry County Park and the Wicklow property. In comparison to the Bayside, the visual character of the North Coastside region is mostly undeveloped and characterized by the steep coastal topography, and rocky beaches.

The central portion of the Coastside (Central Coastside) region extends from the southern flanks of Montara Mountain south to the Pomponio Creek Watershed, and from the Pacific Ocean east to Skyline Boulevard (SR 35) (Figure 2-5). The Santa Cruz Mountains define the topography in this region. The steep mountain slopes transition into gradually sloped coastal terraces near Half Moon Bay. This region is sparsely developed largely due to the presence of several open space preserves (e.g., Purisima Creek Redwoods, El Corte de Madera Creek, Tunitas Creek Open Space Preserve) and steep topography. Coastal terraces and alluvial valleys support fairly widespread farming and livestock grazing uses outside the open space preserves. The only County Park in this region includes Sam McDonald County Park, a 850-acre park located about 3 miles west of La Honda on Pescadero Road. The northwestern half of the park includes a lush redwood forest. Trails within this park provide vistas of the Butano and Skyline Ridges as well as views of the Pacific Ocean.

The southern portion of the Coastside (South Coastside) region encompasses the southwest portion of the County from the Pescadero Creek Watershed south to the Santa Cruz County boundary, and Skyline Boulevard (SR 35) west to the Pacific Ocean (Figure 2-6). The Santa Cruz Mountains traverse the majority of this region, though the topography becomes more gradual near the coastline. The majority of this region consists of undeveloped, open space lands including the State of California Pescadero Marsh Natural Preserve. There is very little urban development throughout this region. The more gradually sloped coastal areas support farming and ranching activities, and the community of Pescadero is located east of SR 1 and the Pescadero Marsh Natural Preserve. County Parks Department facilities in this region include Memorial County Park, Pescadero Creek County Park, the southern portion of Sam McDonald County Park, and Pigeon Point County Park.

SCENIC HIGHWAYS AND CORRIDORS

Figure 3.2-1 shows designated state scenic highways, highways eligible for designation as a state scenic highway, and locally designated scenic roads and scenic corridors. Highway 1 (from Santa Cruz County to Half Moon Bay), I-280 (Santa Clara County line to the San Bruno city limit), and SR 35 (from Santa Cruz County line to SR 92) are officially designated state scenic highways. The following stretches of highway in San Mateo County have been identified as eligible for designation as State Scenic Highways: Highway 1 from San Francisco

County line to Half Moon Bay, I-280 from San Francisco County line to San Bruno city limit and SR 35 from San Francisco County line to I-280.

From Highway 1, portions of the following County Parks and regional trails can be seen: Devil's Slide Trail, Pillar Point Bluff, Mirada Surf East and West parks, Quarry County Park, Pigeon Point County Park, and Tunitas Creek Beach. From SR 92, portions of the Crystal Springs Regional Trail may be visible. Similarly, portions of Edgewood County Park and the Crystal Springs Regional Trail are visible from I-280.

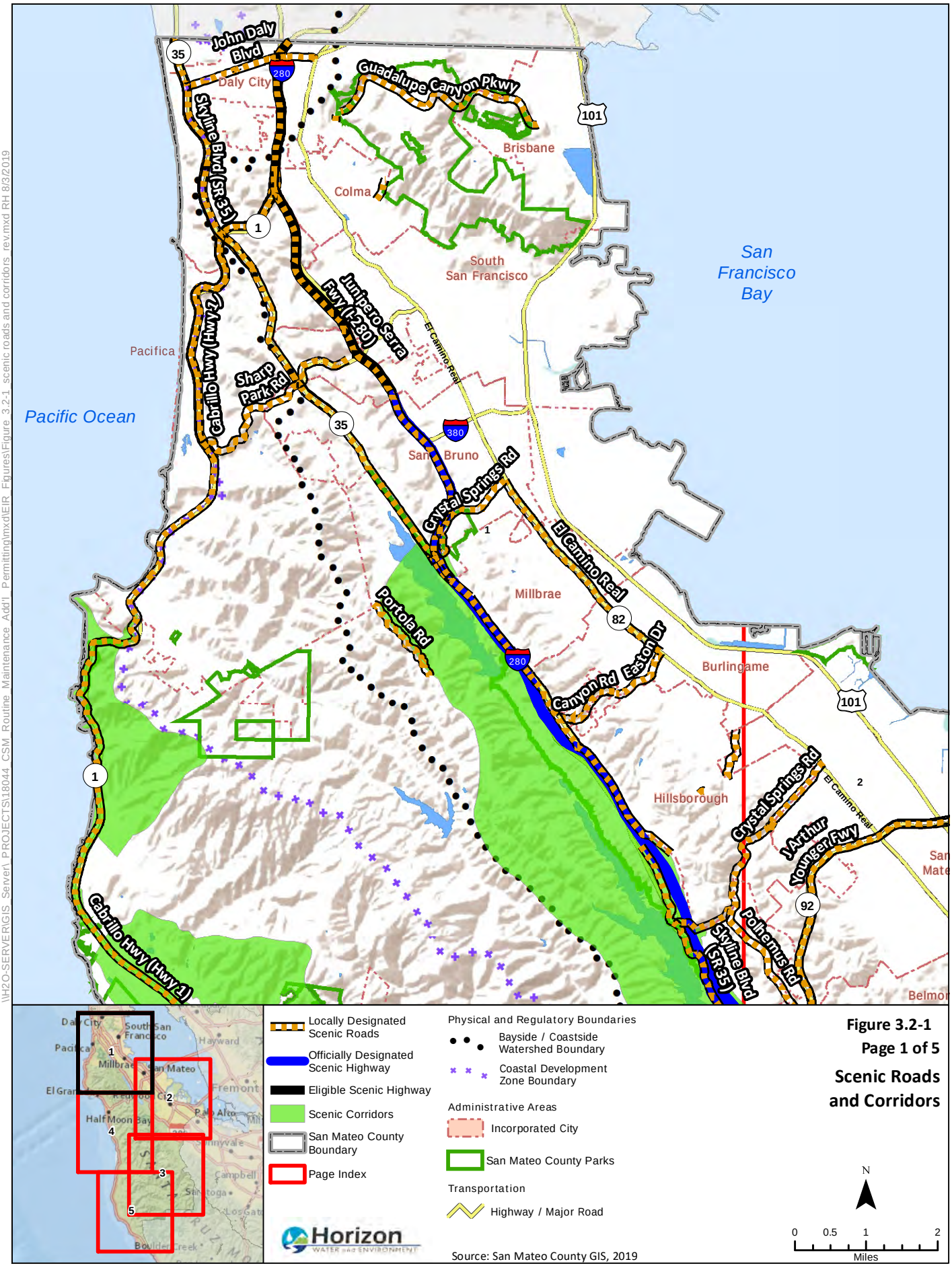

Figure 3.2-1
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Scenic Roads and Corridors

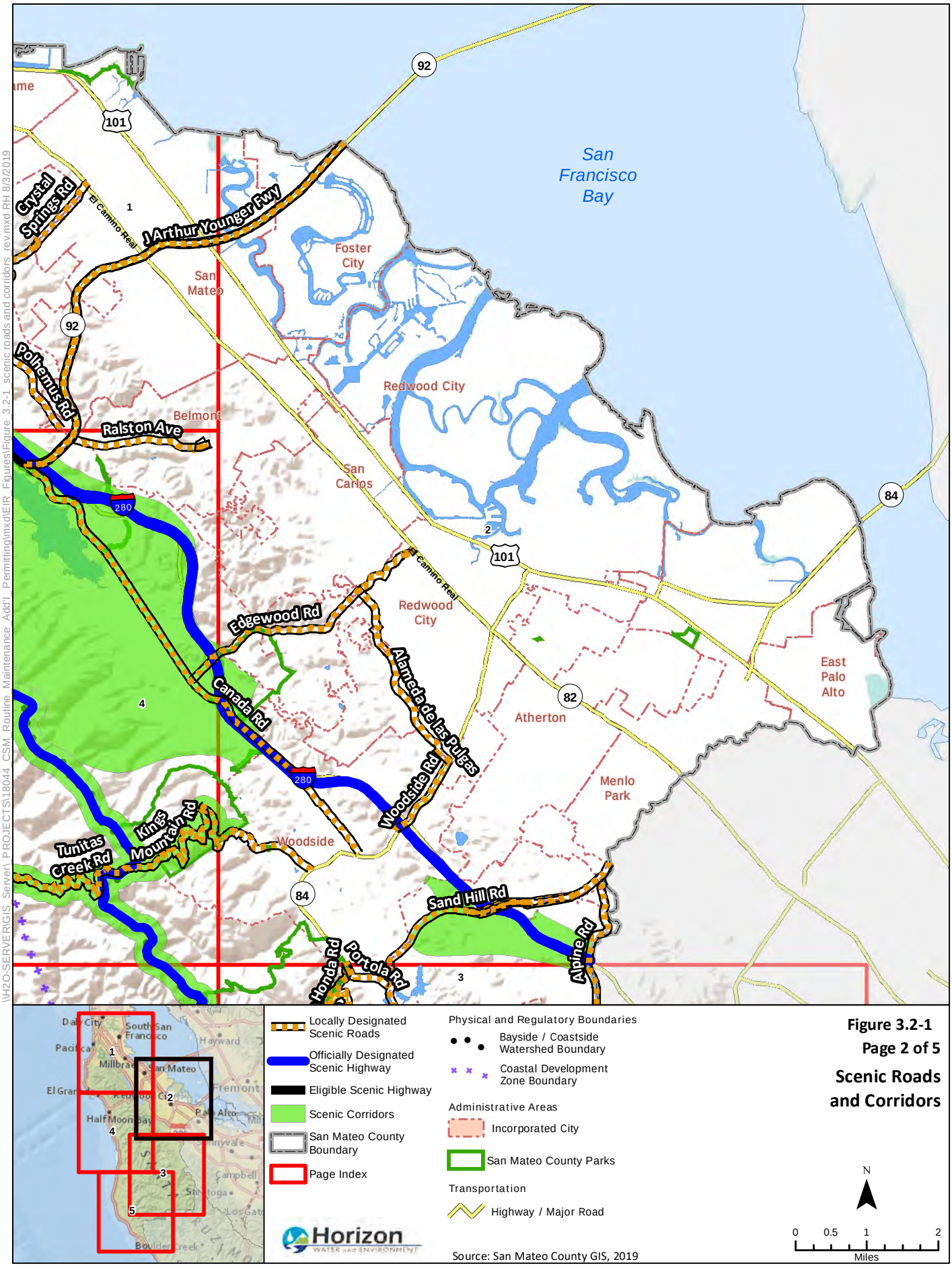

Figure 3.2-1
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Scenic Roads and Corridors

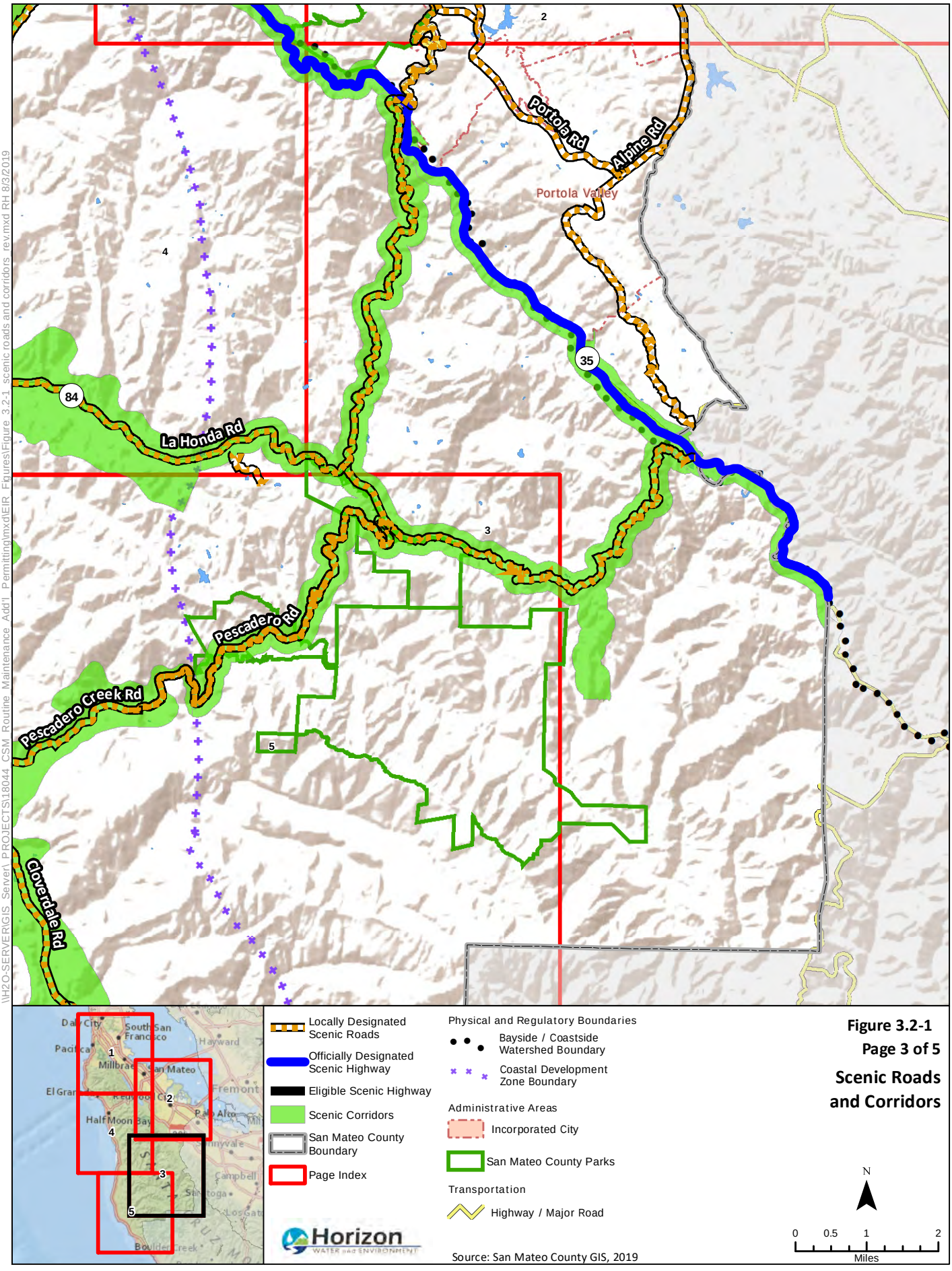

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Figure 3.2-1
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Scenic Roads and Corridors

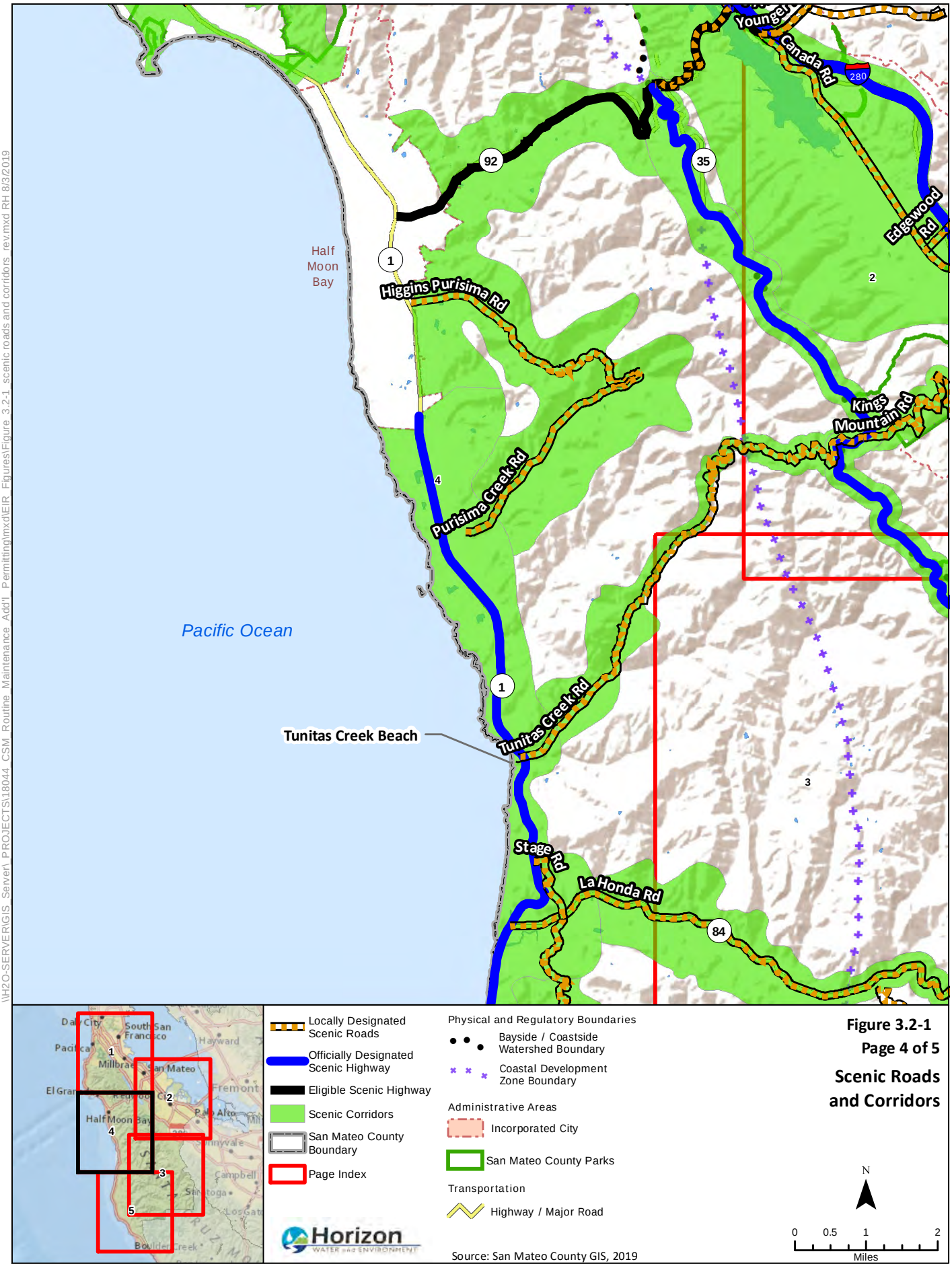

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Figure 3.2-1
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Scenic Roads and Corridors

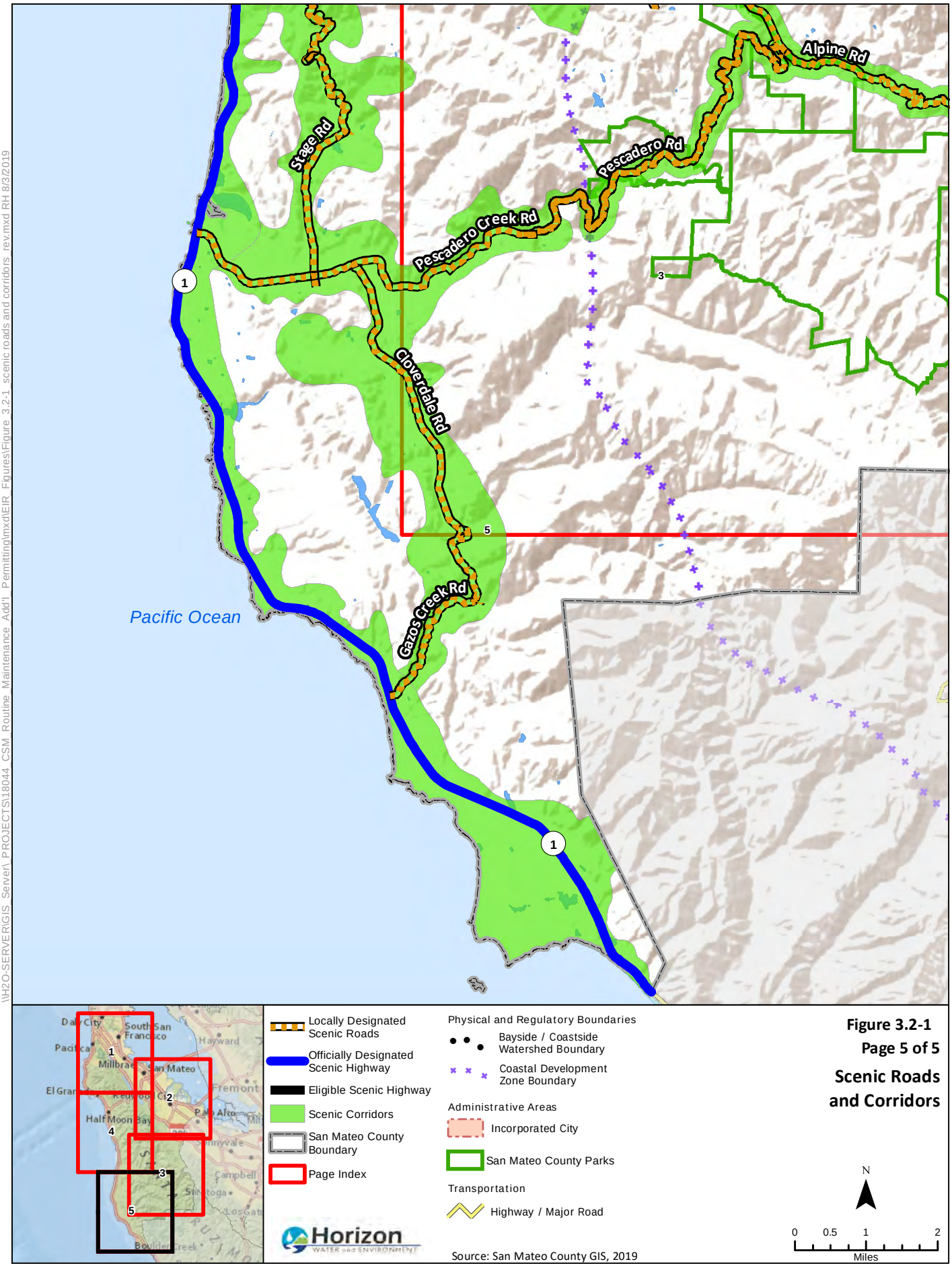

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Figure 3.2-1
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Scenic Roads and Corridors

Table 3.2-1 summarizes roads that are County designated scenic routes in the County of San Mateo General Plan and anticipated routine maintenance sites that may be visible from these roads. These locally designated scenic roads are also shown in Figure 3.2-1. In general, typical maintenance sites that may be partially or fully visible from County designated scenic roads include bank stabilization/slip-out repairs, bridge improvement sites, and culvert repair/replacement sites. As shown in Table 3.2-1, several of these types of maintenance sites would likely be seen from Alpine Road, Pescadero Creek Road, Cloverdale Road, Tunitas Creek Road, Polhemus Road, Sand Hill Road, and Crystal Springs Road. Note that as described in Chapter 2, *Project Description,* not all maintenance sites are known at this time. However, any unknown sites would likely be roadway maintenance sites such as culvert repair/replacement sites or slip-out repairs that would be of similar nature to those described in the Manual (Appendix A). Several County Parks and regional trails are partially visible from County scenic roads. For example, from Alpine Road, portions of Alpine Trail and Sam McDonald County Park may be visible. Similarly, from Pescadero Creek Road, Sam McDonald and Memorial County parks are partially visible. Edgewood County Park can be seen from Canada Road and Edgewood Road, and portions of Wunderlich County Park can be seen from SR 84 and Woodside Road.

Table 3.2-1. County of San Mateo Designated Scenic Routes and Nearby Routine Maintenance Sites

County Designated Routes	Limits of Route (if applicable)	Anticipated Routine Maintenance Sites / County Parks Located Along County Scenic Routes that May be Visible
Alameda de las Pulgas	From Woodside Road to Crystal Springs Road	None
Alpine Road	From Alameda de las Pulgas to Portola Road and from Skyline Boulevard to Pescadero Road	15: Alpine Trail 16: Sam McDonald County Park 18: Alpine Road at San Francisquito Creek (0.3 mile north of Highway 280) – bridge repair 19: Pescadero Creek Road (Alpine Creek; intersection of Pescadero Creek Road and Alpine Road) – bridge repairs 20: Alpine Road (Mile 0.5, 1.1, 1.2, 1.3, and 1.6 from Pescadero Creek Road) – bank stabilization and bridge repair (mile 1.6) 21: Alpine Road culvert replacements (Mile 0.5, 1.2a, 1.2b, 1.3, 1.4, 1.5, 1.6, 1.8, 2.1, 2.2, 2.3, 2.5 from Pescadero Creek Road) 22: Alpine Road culvert replacement (Mile 0.9 and 2.0 from Pescadero Creek Road)

County Designated Routes	Limits of Route (if applicable)	Anticipated Routine Maintenance Sites / County Parks Located Along County Scenic Routes that May be Visible
Cabrillo Highway (Highway 1)	From Junipero Serra Freeway (I-280) to northern limits of the City of Half Moon Bay	23: Devil's Slide Trail 30: Pillar Point Bluffs 32: Mirada Surf West County Park 33: Mirada East County Park 79: Tunitas Creek Beach
Canada Road		4: Crystal Springs Regional Trail 10: Edgewood County Park
Canyon Road	From Skyline Boulevard to Easton Drive	None
Cloverdale Road		59: Pescadero Creek Road at Cloverdale Road (Pescadero Creek) – bridge repair 64: Cloverdale Road (Butano Creek; located at Cloverdale Road and North Butano Park Road) – bridge repair 66: Cloverdale Road (Little Butano Creek; located near North Butano Park Road) – bridge repair 67: Cloverdale Road (approximately 300 feet north of Gazos Creek Rd) series of 4 slip-outs
Crystal Springs Road		3: Junipero Serra County Park 5: Crystal Springs Road (San Mateo Creek; located at intersection with Polhemus Road) – bridge repair
John Daly Boulevard		None
Junipero Serra Freeway (I-280)	From San Francisco to San Bruno	None
Easton Drive	From Canyon Road to El Camino Real	None
Edgewood Road	From Alameda de las Pulgas to Canada Road	10: Edgewood County Park
El Camino Real	From Easton Drive to Crystal Springs Road	None
Gazos Creek Road	From Highway 1 to Cloverdale Road	67: Cloverdale Road (approximately 300 feet north of Gazos Creek Rd) series of 4 slip-outs
Guadalupe Canyon Parkway		1: San Bruno Mountain State and County Park
Half Moon Bay Road	SR 92	4: Crystal Springs Regional Trail
Higgins-Purisima Road		None

County Designated Routes	Limits of Route (if applicable)	Anticipated Routine Maintenance Sites / County Parks Located Along County Scenic Routes that May be Visible
Kings Mountain Road		12: Huddart Park
La Honda Road	SR 84	13: Wunderlich County Park 16: Sam McDonald County Park
Pescadero [Creek] Road		16: Sam McDonald County Park 19: Pescadero Creek Road (Alpine Creek; intersection of Pescadero Creek Road and Alpine Road) – 2 bridge repairs 55: Memorial County Park 62: Pescadero Creek Road (Hayward Bridge – Pescadero Creek; located approximately 2 miles east of Butano Cutoff Road) – bridge repair
Polhemus Road		5: Crystal Springs Road (San Mateo Creek; located at intersection with Polhemus Road) – bridge repair 7: Polhemus Road between Ticonderoga Road and Timberland Way – sediment removal from creek channel
Portola Road		None
Portola State Park Road		None
Purisima Creek Road		None
Ralston Avenue	From Alameda de las Pulgas to J. Arthur Younger Freeway (SR 92)	None
Sand Hill Road		14a: Bear Gulch Creek at Sand Hill Road (near intersection with Whiskey Hill) – bank repair 14b: Sand Hill Road (Bear Gulch Creek; south of Whiskey Hill Road) – bridge repair
Sharp Park Road		None
Skyline Boulevard (SR 35)	From San Francisco to Half Moon Bay Road	None
Stage Road		27: Stage Road (Pescadero Creek; located south of North Street) – bridge repair
Tunitas Creek Road		52: Tunitas Creek Road (Mile 0.6 from Hwy 1) – bank repair 53: Tunitas Creek Road (Miles 2.2A and 2.2B from Hwy 1) – bank repairs

County Designated Routes	Limits of Route (if applicable)	Anticipated Routine Maintenance Sites / County Parks Located Along County Scenic Routes that May be Visible
		and potential large woody debris management at mile 2.2b
Westborough Boulevard	From Skyline Boulevard to Junipero Serra Freeway (I-280)	None
Woodside Road	SR 84 (from Alameda de las Pulgas to La Honda Road)	13: Wunderlich County Park
J. Arthur Younger Freeway	SR 92	4: Crystal Springs Regional Trail

Source: County of San Mateo 1986

VISUAL QUALITY AT MAINTENANCE SITES

As described in Chapter 2, *Project Description,* the majority of DPW's maintenance sites are located along County-maintained roads and associated facilities including roadway shoulders, roadside ditches, culverts, bridges, green infrastructure (GI)-based stormwater facilities and flood control facilities in active flood control zones. The majority of these sites are located in the Coastside region which is mostly undeveloped and rural. Figures 2-7 through 2-9 show representative maintenance sites and activities conducted throughout the County. Figure 2-8 shows representative slope failures along Gazos Creek and Gazos Creek Road, which is situated in a rural and undeveloped area. The aesthetic quality of these particular bank repair sites is considered moderately high as motorists are afforded views of a creek and open space. Similarly, maintenance activities that occur along designated scenic roads or highways, including those listed in Table 3.2-1, tend to have higher visual quality as these roads offer views of natural resources in largely undeveloped areas. A typical view of vegetation management activities that occur along Stage Road is shown in Photo 1 of Figure 2-9, for example. Maintenance sites located in residential areas such as the paved ditch at Farallone Avenue/Kanoff Street in Montara and the low impact development (LID) feature along Farllone Avenue (Figure 2-7, Photos 7 and 8), tend to have moderate visual quality as these stormwater facilities are located in residential areas. Department of Public Works (DPW) maintenance sites in more urbanized areas (mostly in the Bayside) tend to be surrounded by urban development, and therefore have an even lower visual quality rating.

County Parks and regional trails including Devil's Slide Trail, Alpine Trail, and Crystal Springs Regional Trail, are viewed by recreationists such as hikers, bicyclists, joggers, and horseback riders. In general, the Parks Department facilities provide plentiful sightseeing opportunities of nature and open space from trails and scenic viewpoints views. For example, Coyote Point Recreation Area, includes trails and promenades that provide close-up, unobstructed views of the San Francisco Bay. Sam McDonald Park, known for its lush redwood forest, provides scenic viewing opportunities of redwoods as well as long-ranging views of the Pacific Ocean from ridgeway trails. Section 3.13, *Recreation,* provides additional information about hiking trails and sightseeing opportunities available at specific County parks. County Parks and trails are generally considered to have a high visual quality rating as these facilities typically provide scenic views of natural features and landscapes.

VIEWER GROUPS AND VIEWER RESPONSES

Viewer groups in the vicinity of the program area and their sensitivity to visual changes in the area are described below. Viewer groups that have visual access to proposed routine maintenance sites are divided into four categories: recreational users, residents, motorists, and business patrons.

RECREATIONAL USERS

Recreational use in the program area includes a variety of activities, such as hiking, jogging, biking, dog-walking, bird watching, horseback riding, picnicking, and camping. As the proposed program includes County Parks, there are many publicly accessible recreational trails, picnic areas, and other recreational amenities. Tunitas Creek Beach is a popular place for beach goers. Coyote Point Marina is used commonly used by boaters. Many of the trails throughout these parks provide high aesthetic value for such recreational users. Viewer sensitivity of recreational users is considered moderately high because these users typically value the natural environment, appreciate the visual experience, and are sensitive to changes in views.

RESIDENTS

Residents are individuals whose homes are near routine maintenance sites in the program area. As shown in the Manual (Appendix A), DPW has several maintenance sites situated in residential areas of Montara, El Granada and Moss Beach. Some of these maintenance sites include culvert repair/replacements, bridge maintenance, and sediment removal from channels or culverts. Some County Parks are surrounded by residential neighborhoods including but not limited to Junipero Serra County Park, San Pedro Valley County Park, Sanchez Adobe County Park, Quarry County Park, and Wunderlich County Park. Similar to recreational users, viewer sensitivity among residents is moderately high because they are likely to value their local visual resources highly, appreciate the visual experience, and be sensitive to changes in views.

MOTORISTS

Motorists use roadways at varying speeds; normal highway and roadway speeds differ based on the traveler's familiarity with the route and roadway conditions (e.g., presence/absence of rain). Single views typically are of short duration, except on straight stretches where views last slightly longer. Motorists who travel these routes frequently possess low to moderate visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Motorists who travel local routes for sightseeing purposes generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with higher regard and as a holistic visual experience.

As listed in Table 3.2-1 above, several anticipated routine maintenance sites are located along County scenic roads and are within County scenic corridors. Some County Parks Department facilities are also visible from state designated scenic highways such as Highway 1 and I-280. Motorists traveling along these scenic routes for sightseeing purposes are considered to have a higher viewer visual sensitivity, though since the speed of travel is higher on Highway 1 and I-280, viewer sensitivity is expected to be somewhat reduced. Motorists traveling on roads

that are not designated as scenic and/or are located in urban areas, particularly in the Bayside, tend to have a lower visual sensitivity as these motorists tend to be focused on the roadway and surrounding traffic.

WORKERS AND BUSINESS PATRONS

Workers are individuals whose place of employment is in proximity to County-maintained facilities in the program area, or who may come into contact with such facilities as part of their work activities. Business patrons of commercial businesses in the vicinity of County-maintained facilities may also have partial views of maintenance sites in the program area. Viewer sensitivity is low to moderate among workers and business patrons because they generally are not highly focused on visual resources surrounding the work place or business, and will be less sensitive to changes in views.

3.2.2 Regulatory Setting

FEDERAL LAWS, REGULATIONS, AND POLICIES

There are no federal laws or regulations that are applicable to aesthetics in relation to the proposed program. This subsection discusses state and local laws and regulations that pertain to aesthetics for the proposed program.

STATE LAWS, REGULATIONS, AND POLICIES

CALIFORNIA SCENIC HIGHWAY PROGRAM

In 1963, the state legislature established the California Scenic Highway Program, a provision of the Streets and Highways Code, to preserve and enhance the natural beauty of California (Caltrans 2019a). The State Highway System includes designated scenic highways and those that are eligible for designation as scenic highways.

As described above under "Scenic Highways and Corridors," in San Mateo County, Highway 1, I-280, and SR 35 are officially designated state scenic highways (Caltrans 2019b). The following highway segments are eligible for designation as scenic highways: Highway 1 from San Francisco County line to Half Moon Bay, I-280 from San Francisco County line to San Bruno city limit, SR 35 from San Francisco County line to I-280.

CALIFORNIA COASTAL ACT

The California Coastal Act of 1976 (Coastal Act) requires new development (e.g., buildings, roads, pipe, and utility lines) that occur within the Coastal Zone to obtain a Coastal Development Permit from either the California Coastal Commission or the local government. In partnership with coastal cities and counties, the California Coastal Commission plans and regulates the use of land and water in the Coastal Zone. The Coastal Act includes the following policy that protects scenic resources in the Coastside portion of the program area (Division 20 of the Public Resources Code):

> **Section 30251**. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be

visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION'S SAN FRANCISCO BAY PLAN

The San Francisco Bay Conservation and Development Commission's (BCDC's) San Francisco Bay Plan (Bay Plan) includes findings and policies pertinent to public access, appearance, design, and scenic views of development around the Bay. Bay Plan policies relevant to aesthetics in the Bayside portion of the program area include the following:

Appearance, Design, and Scenic Views Policy 1: To enhance the visual quality of development around the Bay and to take maximum advantage of the attractive setting it provides, the shores of the Bay should be developed in accordance with the Public Access Design Guidelines.

Appearance, Design, and Scenic Views Policy 4: Structures and facilities that do not take advantage of or visually complement the Bay should be located and designed so as not to impact visually on the Bay and shoreline. In particular, parking areas should be located away from the shoreline. However, some small parking areas for fishing access and Bay viewing may be allowed in exposed locations.

LOCAL LAWS, REGULATIONS, AND POLICIES

Appendix C includes relevant local plans, policies and regulations pertaining to aesthetics. As described in Table 3.2-1 and shown in Figure 3.2-1, above, several maintenance sites are located along County designated scenic roads and within County scenic corridors. More specifically, Policy 4.22 (Scenic Corridors) of the County's General Plan (1986) seeks to protect and enhance the visual quality of scenic corridors by managing the location and appearance of structural development.

3.2.3 Impact Analysis

METHODOLOGY

This section evaluates whether the proposed program would result in significant impacts related to aesthetic resources. The following significance criteria were used to evaluate the proposed program's effects on aesthetic resources in comparison to the existing baseline condition. The visual analysis is based on evaluations of aerial and ground-based photographs of the anticipated routine maintenance sites.

Visual effects were assessed based on the proposed program's potential to substantially damage scenic resources (e.g., scenic roads, trees, and rock outcroppings) or to degrade the visual character of the site. The evaluation of temporary or short-term visual impacts considers whether construction activities could substantially degrade the existing visual character or quality of the site or surrounding area, as well as the duration over which any such changes would occur. Because of their short-term nature, maintenance activities are typically considered to have a less-than-significant effect on visual quality.

Actions with long-term visual effects, such as constructing new or altered structures, grading roads, removing trees, and introducing new sources of nighttime light and daytime glare, can permanently alter the landscape in a manner that could affect existing scenic resources and the visual character or quality of the area, depending on the perspective of the viewer. In determining impact potential, the assessment considers the visual sensitivity of the study area. However, new structures, significant grading, and new sources of light are not proposed as part of the program. As described below, limited tree removal would occur under the proposed program.

CRITERIA FOR DETERMINING SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and the County's environmental review checklist, it was determined that the proposed program would result in a significant impact on aesthetics if it would:

- Have a substantial adverse effect on a scenic vista, views from existing residential areas, public lands, water bodies or roads;
- Substantially damage or destroy scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings viewed from a state scenic highway;
- Substantially degrade the existing visual character or quality of public views of the site and its surroundings (e.g., significant change in topography, ground surface relief features, and/or development on a ridgeline) in non-urbanized areas;
- Conflict with applicable zoning and other regulations governing scenic quality in urbanized areas; or
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

ENVIRONMENTAL IMPACTS

Impact AES-1: Adverse Effects on Scenic Vistas, Views from Residential Areas, Public Lands, Water Bodies or Roads (*Less than Significant*)

As described above, several maintenance sites are located along designated scenic roads (Table 3.2-1) and include County Parks and trails that provide scenic viewing opportunities. Some scenic viewpoints are located at relatively high elevations along ridgelines (e.g. in Sam McDonald County Park) that are viewed by recreationists. Some scenic roads, such as La Honda Road (SR 84) and Alpine Road, provide foreground views of redwood forests and other natural landscapes. Highway 1 also offers many scenic vista points looking toward the Pacific Ocean that are commonly used by motorists.

Maintenance activities including vegetation maintenance (e.g., mowing, tree pruning and removal), culvert repair and replacement, bank stabilization, bridge maintenance, and sediment removal from a creek channel, may be visible from scenic viewpoints, residential neighborhoods, and public roads during the construction phase. During implementation of these various activities, temporary views of maintenance vehicles, machinery, and maintenance personnel may be available at varying degrees. However, maintenance work at any given site is short in duration (lasting no longer than a few weeks). Once maintenance is completed, the visual conditions at the County's maintenance sites would not substantially change to the degree that an adverse effect would occur.

Proposed vegetation maintenance activities, such as mowing, tree removal and pruning, could somewhat alter the near-term character of public trails or roads; however, these activities are conducted in specific areas for the purposes of maintaining fire breaks, trails that are highly used by recreationists, and site distances for motorists along County roads. Bank stabilization projects would result in some sections of visibly altered banks with new materials; however, since the Program is limited to seven repairs per year, adverse effects on scenic vistas, roads, and water bodies would be minimal. Moreover, the repair of a severely eroded road embankment is generally an improved aesthetic condition to most viewers, compared to a damaged/threatened road or creek embankment. Repaired or replaced culverts would be similar in nature to existing culverts visible along County roads. Similarly, bridge maintenance activities would generally improve the visual conditions of such facilities as these projects primarily involve surface and deck treatments, repairing railings, clearing debris and other minor activities within the footprint of the existing bridge.

While not required to reduce the impact to a less than significant level, implementation of BMPs listed below would reduce the amount of tracking from construction vehicles and equipment and reduce the amount of dust emitted, and thereby improve visual conditions at work areas.

Applicable Best Management Practices

The County would implement the following BMPs to further minimize temporary impacts on scenic resources visible within state scenic highways. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-19: Dust Management Controls

Conclusion

The impact on scenic vistas, views from existing residential areas, public lands, water bodies or roads is considered **less than significant**. The application of the above-listed BMPs provide further avoidance and minimization of potential effects.

Impact AES-2: Damage to Scenic Resources Viewed from a Scenic Highway, Including, but Not Limited to, Trees, Rock Outcroppings, and Historic Buildings within a State Scenic Highway (*Less than Significant*)

As described above in Section 3.2.1 under the heading "Scenic Highways and Corridors," some County Parks and regional trails are visible from state designated scenic highways including Highway 1, I-280, and SR 92. For example, from Highway 1, portions of the following parks or trails can be seen at varying degrees: entrance to Devil's Slide Trail, Pillar Point Bluff, Mirada Surf East and West parks, Quarry County Park, Pigeon Point County Park, and Tunitas Creek Beach. From SR 92, portions of the Crystal Springs Regional Trail may be visible. Portions of Edgewood County Park and the Crystal Springs Regional Trail are visible from I-280. Maintenance activities that may be partially visible from these highways include vegetation maintenance, culvert repair, unpaved road or trail maintenance, and other minor facility repairs. Some tree removal work may occur at the above-referenced parks or trails; however, this activity would be limited to removing hazard trees (dead, decaying or fallen trees) that present a fire hazard and/or are public safety hazard within proximity to Parks

Department facilities such as trails, picnic areas, campgrounds and parking lots. As such, tree removal is not expected to substantially damage views from Highways 1, I-280 or SR 92. In addition, no rock outcroppings or historic buildings would be impacted under the proposed program. Lastly, because all other maintenance activities would be short in duration and because views of the above-referenced County parks would be fleeting due to the speed of travel, these maintenance activities would not substantially damage views from Highway, I-280 or SR 92.

Although not required to reduce the impact to a less than significant level, implementation of the below-listed BMPs would reduce the amount of tracking from construction vehicles and equipment and reduce the amount of dust emitted, and thereby improve visual conditions at work areas.

APPLICABLE BEST MANAGEMENT PRACTICES

The County would implement the following BMPs to further minimize temporary impacts on scenic resources visible within state scenic highways. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-19: Dust Management Controls

CONCLUSION

The impact on scenic resources is considered **less than significant**. Implementation of the above-listed BMPs would further avoid and minimize effects on scenic resources.

Impact AES-3: Substantial Degradation of the Existing Visual Character or Quality of the Site and its Surroundings in Non-Urbanized Areas (*Less than Significant*)

The visual character and quality of proposed maintenance sites in non-urbanized areas vary from site to site. For example, some culvert or bank repair sites along County roads or trails are situated in redwood forests, along creeks, or near agricultural lands. Parks Department facilities vary in visual character but range from redwood forests, open meadows, eucalyptus forests, coastal beaches and bluffs, among other natural landscapes. Most of the County's maintenance sites in non-urbanized areas are in the Coastside. The County highly values resources along County designated scenic roads and scenic corridors, as is evident in the County General Plan summarized in Appendix C. Degradation of the visual character of maintenance sites could adversely affect sensitive user groups such as recreationists and residents.

Proposed maintenance activities would involve vegetation maintenance (e.g., mowing, trimming, herbicide application, hazard tree removal), culvert repair/replacement, bank stabilization and slip-out repairs, bridge repairs, sediment and debris clearing, GI facility maintenance, and other minor activities. The following paragraphs describe the proposed program's effects on the visual character.

VEGETATION MANAGEMENT

Vegetation maintenance activities such as mowing, trimming and pruning, tree removal, would be conducted routinely and relatively consistently year to year. However, as stated in Chapter 2, *Project Description,* the work locations may be different year to year. Vegetation maintained along County roads would be limited to the areas immediately along these roads in order to maintain sight distances and clearances for motorists. Within County Parks Department facilities, vegetation/fuel management is limited to maintaining defensible space around Parks Department facilities (100-foot wide buffer) and removing hazardous trees within a 200-foot buffer of Parks Department facilities. Herbicides would be used in combination with mechanical methods to control invasive plants and non-native plants along County roads, trails, and at closed landfills (which would not be publicly visible). As stated in Chapter 2, herbicides are used sparingly in County parks and typically used when mechanical applications are deemed ineffective at managing vegetation.

Because the work locations vary year to year and because the proposed program has self-imposed limits, vegetation management activities would not substantially change the visual character of DPW or Parks Department sites and surroundings. Such vegetation management activities would not be any different than those currently conducted by the County. Additionally, maintaining vegetation along County roads, trails, and around other Parks Department facilities could have a beneficial effect by minimizing views of overgrowth.

OTHER MAINTENANCE ACTIVITIES

The remainder of maintenance activities (bank stabilization, slip-out/slide repairs, bridge maintenance, culvert repair or replacement, sediment and debris removal, and other channel and storm drainage maintenance) would occur at multiple locations, but would generally be done infrequently at any one location. During maintenance activities at any given site, the visual character may be somewhat degraded at the immediate time of maintenance work due to the presence of construction materials, equipment and vehicles. However, construction activities at any given site would be temporary and likely not last more than a few weeks. Implementation of the below-listed BMPs would reduce temporary adverse effects on the visual character of maintenance sites. Depending on the maintenance site, visual conditions could result in an improvement as a result of proposed maintenance activities. For example, bank stabilization projects utilizing biotechnical treatments would improve visual conditions by establishing vegetation along creek banks. Additionally, removing debris would improve the cleanliness at maintenance sites.

APPLICABLE BEST MANAGEMENT PRACTICES

- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-19: Dust Management Controls

CONCLUSION

With implementation of the above-listed BMPs, the proposed program's impact on visual character of maintenance sites and surroundings would be **less than significant**.

Impact AES-4: Conflict with applicable zoning and other regulations governing scenic quality in urbanized areas (*Less than Significant*)

While the majority of proposed maintenance activities would occur in non-urbanized areas, some maintenance activities would occur in urbanized areas in the County. Examples of maintenance activities that would occur in urbanized areas include vegetation management and sediment removal (e.g. Belmont Creek and Old County Road [site no. 8]), bridge maintenance (e.g. Industrial Way at Belmont Creek [site no. 9]), marina maintenance activities at Coyote Point, and maintenance of swales and GI facilities in Montara and Moss Beach. Because the proposed program focuses on maintaining existing public infrastructure to ensure facilities are operating properly, the proposed program would not substantially change the scenic quality of a maintenance site and not conflict with zoning or other regulations governing scenic quality.

APPLICABLE BEST MANAGEMENT PRACTICES

None applicable.

CONCLUSION

For the reasons described above, this impact would be **less than significant**.

Impact AES-5: New Sources of Light or Glare (*No Impact*)

Proposed program maintenance activities would be conducted during daylight hours only. No nighttime lighting would be utilized for maintenance activities. The proposed program would not involve construction of new facilities or modifications to existing facilities that would result in new reflective surfaces or installation of lighting. Therefore, no impact would occur.

APPLICABLE BEST MANAGEMENT PRACTICES

None applicable.

CONCLUSION

For the reasons described above, **no impact** related to new sources of light or glare would occur.

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3.3 AIR QUALITY

This section describes the existing air quality conditions in the study area, which includes the County of San Mateo Routine Maintenance Program (proposed program) area and the San Francisco Bay Area Air Basin (SFBAAB). This section also describes the relevant air quality regulations, air quality significance criteria, methodology used to evaluate impact significance, and the proposed program's resulting air quality impacts. This section also describes applicable best management practices (BMPs) and mitigation measures that would reduce potentially significant air quality impacts.

3.3.1 ENVIRONMENTAL SETTING

Study Area

The study area consists of the locations where physical actions associated with the proposed program would take place. Maintenance activities would occur at San Mateo County (County) facilities and features located throughout the County (described in Section 2.3 and Figures B-1 through B-7 in Appendix A). This area is located within the SFBAAB, which is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). The study area for air quality impacts is evaluated at both local and regional scales. Air quality at the local scale involves evaluating the potential for local "hot spots" to result in areas adjacent to anticipated routine maintenance sites due to emissions of pollutants of local concern, including carbon monoxide, particulate matter, and toxic air contaminants. Air quality at the regional scale involves evaluating air pollutants of regional concern such as ozone, ozone precursors, and particulate matter.

San Francisco Bay Area Air Basin

The California Air Resources Board (CARB) has divided California into regional air basins according to topographic air drainage features. The SFBAAB, managed by the BAAQMD, comprises all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara Counties, as well as portions of Solano and Yolo Counties. Air quality is determined by natural factors such as climate, topography, and meteorology, in addition to the presence of air pollution sources and ambient conditions.

The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, all of which distort normal wind flow patterns. The Coast Ranges split, resulting in a western coast gap, the Golden Gate, and an eastern coast gap, Carquinez Strait; these allow air to flow in and out of the SFBAAB and the Central Valley (BAAQMD 2017a).

BAAQMD divides the SFBAAB into subregions with distinct climate and topographic features. The proposed program area is located in the Peninsula Subregion of the SFBAAB.

Peninsula Subregion

The Peninsula subregion extends from northwest of San Jose to the Golden Gate. The Santa Cruz Mountains run up the center of the peninsula, with elevations exceeding 2,000 feet at the southern end, decreasing to 500 feet in South San Francisco. Coastal towns experience a high incidence of cool, foggy weather in the summer. Cities in the southeastern Peninsula experience warmer temperatures and fewer foggy days because the marine layer is blocked by the ridgeline to the west. The blocking effect of the Santa Cruz Mountains results in variations in summertime maximum temperatures in different parts of the Peninsula. For example, in coastal areas the mean maximum summer temperatures are in the mid-60's, while in Redwood City the mean maximum summer temperatures are in the low-80's. Mean minimum temperatures during the winter months are in the high-30's to low-40's on the eastern side of the Peninsula and in the low 40's on the coast.

On the eastern side of the mountains, winds are generally from the west, although wind patterns in this area are often influenced greatly by local topographic features. Air pollution potential is highest along the southeastern portion of the Peninsula. This is the area most protected from the high winds and fog of the marine layer. Pollutant transport from upwind sites is common. In the southeastern portion of the Peninsula, air pollutant emissions are relatively high due to motor vehicle traffic as well as stationary sources. At the northern end of the Peninsula, pollutant emissions are high, especially from motor vehicle congestion. Localized pollutants, such as carbon monoxide, can build up in "urban canyons." Winds are generally fast enough to carry the pollutants away before they accumulate (BAAQMD 2017a).

Air Pollutants

Several air pollutants of concern would be associated with proposed program activities. A brief description of these air pollutants is discussed below. Two main categories of air pollutants are described: criteria air pollutants and toxic air contaminants (TACs). Criteria air pollutants are those air pollutants with national and/or state air quality standards that define allowable concentrations of these substances in the ambient air. TACs are those air pollutants identified that may lead to serious illness or increased mortality, even when present in relatively low concentrations.

Carbon Monoxide

Carbon monoxide (CO) is an odorless, colorless gas that is highly toxic. CO is formed by the incomplete combustion of fuels and is emitted directly into the air. Ambient CO concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distribution of vehicular traffic. CO concentrations are also influenced by wind speed and atmospheric mixing. Under inversion conditions (when a low layer of warm air, along with its pollutants, is held in place by a higher layer of cool air), CO concentrations may be distributed more uniformly over an area to some distance from vehicular sources. CO binds with hemoglobin, the oxygen-carrying protein in blood, and thereby reduces the blood's capacity for carrying oxygen to the heart, brain, and other parts of the body. At high concentrations, CO can cause heart difficulties in people with chronic diseases, impair mental abilities, and cause death.

Ozone

Ozone (O_3) is a reactive gas that, in the troposphere (the lowest region of the atmosphere), is a product of the photochemical process involving the sun's energy. It is a secondary pollutant that is formed when nitrogen oxides (NOx) and reactive organic gases (ROG) react in the presence of sunlight. Ozone at the earth's surface causes numerous adverse health effects and is a criteria pollutant. It is a major component of smog. In the stratosphere, ozone exists naturally and shields the Earth from harmful incoming ultraviolet radiation. High concentrations of ground level ozone can adversely affect the human respiratory system and aggravate cardiovascular disease and many respiratory ailments. Ozone also damages natural ecosystems such as forests and foothill communities, agricultural crops, and some man-made materials such as rubber, pain, and plastics.

Nitrogen Oxides

NOx is a family of gaseous nitrogen compounds that are precursors to the formation of ozone and particulate matter. The major component of NOx, nitrogen dioxide (NO_2), is a reddish-brown gas that is toxic at high concentrations. NOx results primarily from the combustion of fossil fuels under high temperature and pressure. On-road and off-road motor vehicles and fuel combustion are the major sources of this air pollutant.

Reactive Organic Gases

Reactive Organic Gases (ROGs) are hydrocarbon compounds that exist in the ambient air. ROGs contribute to the formation of smog and/or may themselves be toxic. ROG emissions are a major precursor to the formation of ozone.

Particulate Matter

Particulate matter (PM) is a complex mixture of extremely small particles and liquid droplets. PM is made up of various components, including acids, organic chemicals, metals, and soil or dust particles. The size of particles is directly linked to the potential for causing health problems. PM particles that are smaller than 10 micrometers in diameter, called PM10, are of most concern because these particles pass through the throat and nose and enter the lungs. Once inhaled, these particles can affect the heart and lungs and cause serious health effects. PM10 particles are typically found near roadways and industrial operations that generate dust. PM10 particles are deposited in the thoracic region of the lungs. Fine particles, called PM2.5, are particles less than 2.5 micrometers in diameter and are found in smoke and haze. PM2.5 particles penetrate deeply into the thoracic and alveolar regions of the lungs.

Sulfur Dioxide

Sulfur dioxide (SO_2) is a colorless, irritating gas with a "rotten egg" smell formed primarily by the combustion of sulfur-containing fossil fuels. Suspended SO_2 particles contribute to poor visibility in the SFBAAB and are a component of PM10.

Lead

Lead (Pb) is a metal that is a natural constituent of air, water, and the biosphere. Lead is neither created nor destroyed in the environment, so it essentially persists forever. The health effects of lead poisoning include loss of appetite, weakness, apathy, and miscarriage.

Lead poisoning can also cause lesions of the neuromuscular system, circulatory system, brain and gastrointestinal tract.

Gasoline-powered automobile engines were a major source of airborne lead through the use of leaded fuels. The use of leaded fuel has been mostly phased out, which has resulted in dramatic drops in ambient concentrations of lead.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is associated with geothermal activity, oil and gas production, refining, sewage treatment plant operations, and confined animal feeding operations. H_2S is extremely hazardous in high concentrations and can cause death.

Sulfates

Sulfates are the fully oxidized, ionic form of sulfur. Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds result primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

CARB's sulfate standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms, and an increased risk of cardiopulmonary disease. Sulfates are particularly effective in degrading visibility and, due to the fact that they are usually acidic, can harm ecosystems and damage materials and property.

Vinyl Chloride

Vinyl chloride is a colorless gas that does not occur naturally. It is formed when other substances, such as trichloroethane, trichloroethylene, and tetrachloroethylene, are broken down. Vinyl chloride is used to make polyvinyl chloride (PVC) for a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

Toxic Air Contaminants

Hundreds of different types of TACs exist, with varying degrees of toxicity. Many TACs are confirmed or suspected carcinogens, or are known or suspected to cause birth defects or neurological damage. For some chemicals, such as carcinogens, no thresholds exist below which exposure can be considered risk-free. Examples of TAC sources in the proposed program area include fossil fuel combustion sources, metals and other contaminants from concrete batch plants, and asbestos, including naturally occurring asbestos (NOA).

Sources of TACs include stationary sources, area-wide sources, and mobile sources. U.S. Environmental Protection Agency (USEPA) maintains a list of 187 TACs, also known as hazardous air pollutants. These hazardous air pollutants are included on CARB's list of TACs (CARB 2018). According to the California Almanac of Emissions and Air Quality (CARB 2013), many researchers consider diesel PM (DPM) to be a primary contributor to health risk from TACs because particles in the exhaust carry many harmful organics and metals, rather than being a single substance as are other TACs. Unlike many TACs, outdoor DPM is not monitored

by CARB because no routine measurement method exists. However, using the CARB emission inventory's PM10 database, ambient PM10 monitoring data, and results from several studies, CARB has made preliminary estimates of DPM concentrations throughout the state (California Office of Environmental Health Hazard Assessment [OEHHA] 2001).

Naturally Occurring Asbestos

Asbestos is the common name for a group of naturally occurring, fibrous silicate minerals that can separate into thin but strong and durable fibers. Ultramafic rocks form in high-temperature environments well below the surface of the earth. By the time they are exposed at the ground surface by geologic uplift and erosion, ultramafic rocks may be partially to completely altered into a type of metamorphic rock called serpentinite. Sometimes the metamorphic conditions are right for the formation of chrysotile asbestos or tremolite-actinolite asbestos in the bodies of these rocks, along their boundaries, or in the soil. Asbestos that occurs naturally in the environment (NOA) was identified as a TAC in 1986 by CARB. NOA is located in many parts of California and is commonly associated with ultramafic rocks, according to the California Department of Conservation, Division of Mines and Geology's 2002 special publication, "*Guidelines for Geologic Investigations of Naturally Occurring Asbestos in California*." (The department was renamed the California Geological Survey [CGS] in 2006.)

For individuals living in areas of NOA, there are many potential pathways for airborne exposure. Exposure to soil dust containing asbestos can occur under a variety of scenarios, including children playing in the dirt; dust raised from unpaved roads and driveways covered with crushed serpentine; grading and earth disturbance associated with construction activity; quarrying; and gardening. For homes built on asbestos outcroppings, asbestos can be tracked into the home on shoes and can also enter as fibers suspended in the air. Once such fibers are indoors, they can be entrained into the air by normal household activities such as vacuuming; many respirable fibers are small enough to pass through vacuum cleaner bags.

People exposed to low levels of asbestos may be at an elevated risk (e.g., above background rates) of lung cancer and mesothelioma. The risk is proportional to the cumulative inhaled dose (quantity of fibers), and also increases with the time since first exposure. Although numerous factors influence the disease-causing potency of any form of asbestos (such as fiber length and width, fiber type, and fiber chemistry), all forms are carcinogenic.

In the County, some small areas east of Lower Crystal Springs Reservoir and around Emerald Hills contain ultramafic rock outcrops that may contain NOA (Wagner et al. 1991). Some proposed maintenance activities (e.g. along Crystal Springs Trail) are anticipated to take place in these areas.

Air Quality Attainment and Local Conditions

CARB and USEPA have established ambient air quality standards (AAQS) to protect human health and welfare. Geographic areas are deemed to be in "attainment" if these standards are met or "nonattainment" if they are not met. Nonattainment status is classified by the severity of the nonattainment problem. Marginal, moderate, serious, severe, and extreme nonattainment classifications have been established for ozone; nonattainment classifications for PM range from marginal to serious. **Table 3.3-1** shows the attainment status for the SFBAAB.

Table 3.3-1. San Francisco Bay Area Air Basin Attainment Status

Contaminant	Averaging Time	Concentration	State Standards Attainment Status[1]	Federal Standards Attainment Status[2]
Ozone	1-hour	0.09 ppm	N	See footnote 3
	8-hour	0.070 ppm	N	N
Carbon Monoxide	1-hour	20 ppm	A	
		35 ppm		A
	8-hour	9.0 ppm	A	A[4]
Nitrogen Dioxide	1-hour	0.18 ppm	A	
		0.100 ppm[6]		U
	Annual arithmetic mean	0.030 ppm	A	
		0.053 ppm		A
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	
		0.075 ppm		A
	24-hour	0.04 ppm	A	
		0.14 ppm		A
	Annual arithmetic mean	0.030 ppm		A
Particulate Matter (PM10)	24-hour	50 µg/m^3	N	
		150 µg/m^3		U
	Annual arithmetic mean	20 µg/m^3	N	
Fine Particulate Matter (PM2.5)	24-hour	35 µg/m^3		N (Moderate)[7]
	Annual arithmetic mean	12 µg/m^3	N	U/A
Sulfates	24-hour	25 µg/m^3	A	
Lead[8]	30-day average	1.5 µg/m^3	A	
Hydrogen Sulfide	1-hour	0.03 ppm	U	
Vinyl Chloride[8] (chloroethene)	24-hour	0.010 ppm	U	
Visibility Reducing Particles	8 hour (10:00 to 18:00 PST)	See footnote 5	U	

A – attainment
N – non-attainment
U – unclassified

ppm – parts per million
µg/m^3 – micrograms per cubic meter
PST – pacific standard time

Notes:

1. California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM10, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then

some measurements may be excluded. In particular, measurements that are excluded include those that the CARB determines would occur less than once per year on average.

2. National standards shown are the "primary standards" designed to protect public health. National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once per year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 parts per billion) or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met by spatially averaging annual averages across officially designated clusters of sites and then determining if the 3-year average of these annual averages falls below the standard.
3. The national 1-hour ozone standard was revoked by USEPA on June 15, 2005. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 ppm to 0.070 ppm. An area meets the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. This table provides the attainment statuses for the 2015 standard of 0.070 ppm.
4. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
5. Statewide Visibility-Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average of nitrogen dioxide at each monitoring station within an area must not exceed 0.100 ppm (effective January 22, 2010).
7. On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour PM2.5 national standard. This USEPA rule suspends key state implementation plan (SIP) requirements as long as monitoring data continues to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as "non-attainment" for the national 24-hour PM2.5 standard until such time as the Air District submits a "redesignation request" and a "maintenance plan" to USEPA, and USEPA approves the proposed redesignation.
8. CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure below which there are no adverse health effects determined.

Source: CARB 2017, USEPA 2018, USEPA 2019, BAAQMD 2019a

Air Monitoring Data

BAAQMD, CARB, and USEPA operate an extensive air monitoring network to measure progress toward attainment of the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The closest air monitoring station to the proposed program area is in Redwood City. **Table 3.3-2** shows the most recent three years of available data. Data from monitoring stations in San Francisco, San Jose, and Los Gatos are included as well since some anticipated routine maintenance sites are closer to these monitoring sites and since some criteria pollutants are not covered by the Redwood City station. The Redwood City monitoring station is located roughly 3.5 miles east of the Cordilleras Road maintenance site (No. 11 as shown in Table B-1 of the County of San Mateo Routine Maintenance Program Manual [Manual] [Appendix A]). The San Francisco station is located approximately 5 miles north of San Bruno Mountain State and County Park. The Los Gatos station is approximately 13 miles east of Pescadero Creek Park. The San Jose station is about 18 miles east of multiple Alpine Road maintenance sites.

Table 3.3-2. Air Monitoring Data for 2015-2017

Monitoring Station	Pollutant Standard		2015		2016		2017	
			Exceed-ances[a]	Maximum Concentration	Exceed-ances	Maximum Concentration	Exceed-ances	Maximum Concentration
Redwood City	Ozone	1-hour	0/0	0.086 ppm	0/0	0.075 ppm	0/2	0.115 ppm
	Ozone	8-hour	1/1	0.071 ppm	0/0	0.060 ppm	2/2	0.086 ppm
	NO_2	1-hour	0/0	47.8 ppb	0/0	45.7 ppb	0/0	67.4 ppb
	PM2.5	24-hour	0	34.6 µg/m^3	0	19.5 µg/m^3	6	60.8 µg/m^3
	PM2.5	Annual[b]	N/A	5.7 µg/m^3	N/A	8.3 µg/m^3	N/A	9.0 µg/m^3
Los Gatos	Ozone	1-hour	0/1	0.100 ppm	0/0	0.091 ppm	0/0	0.093 ppm
	Ozone	8-hour	4/5	0.084 ppm	0/0	0.065 ppm	3/3	0.075 ppm
San Francisco	PM10	24-hour	0/0	44.7 µg/m^3	0/0	35.7 µg/m^3	0/2	75.9 µg/m^3
	PM10	Annual[b]	N/A	9.8 µg/m^3	N/A	8.8 µg/m^3	N/A	11.0 µg/m^3
San Jose	PM10	24-hour	0/1	58.8 µg/m^3	0/0	40.0 µg/m^3	0/6	69.4 µg/m^3
	PM10	Annual[b]	N/A	21.3 µg/m^3	N/A	17.5 µg/m^3	N/A	20.7 µg/m^3

Notes: ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter; N/A = Not Applicable

[a] The first value represents the number of days on which the federal standard was exceeded. The second number is the number of days on which the state standard was exceeded.

[b] Annual values for particulate matter are averages.

Maximum concentration is from national data where national and state values differ. No data for CO was available from these sites.

Source: CARB 2019.

TACs in SFBAAB

In 2006, BAAQMD undertook the creation of a regional emissions inventory for TACs from major sources of emissions in the Bay Area, including nearly 200 toxic gases or particles. Emissions inventories for 2005 and 2015 were used as data inputs to a regional air quality model to predict concentrations of key toxic compounds and the associated cancer risk. Some of the key findings from this work were that DPM contributed more than 85 percent of the total inventoried cancer risk and that simulated potential cancer risk from TACs is highest near major DPM sources. Another key finding is that cancer risk from TACs is dropping: when emissions inputs accounted for state diesel regulations and other reductions, modeled risk values were projected to drop by more than 50 percent between 2005 and 2015. Measurement-based assessments of cancer risk from air pollution show similar reductions. According to the most recent analysis (for 2012), the average regional cancer risk was about 300 per million. That is, for every million residents exposed for 70 years to current levels of TACs, 300 would be expected to develop cancer as a result of the exposure. According to the analysis, more than 70 percent of the cancer risk related to air pollution in the Bay Area is attributable to DPM, and 90 percent of the total risk is attributable to three compounds: DPM, benzene, and 1,3-butadiene. All three of these compounds are produced through fuel combustion (BAAQMD 2014).

Sensitive Receptors

Sensitive receptors are those segments of the population most susceptible to poor air quality: children, the elderly, and individuals with pre-existing serious health problems affected by air quality (e.g., asthma) (CARB 2005). Examples of locations that contain sensitive receptors are residences, schools and school yards, parks and playgrounds, daycare centers, nursing homes, and medical facilities. Residences include houses, apartments, and senior living complexes. Medical facilities can include hospitals, convalescent homes, and health clinics. Playgrounds include play areas associated with parks or community centers. Proposed maintenance activities would occur mostly along creeks, roads, trails, culverts, and at other County-owned facilities. Given the scale of the proposed program, unknown location of future maintenance sites, and limited duration at any given maintenance site, individual sensitive receptors have not been identified. However, it is assumed that receptors in the vicinity of program activities could include any of the receptor types mentioned previously, in particular single-family residences in rural, suburban, and urban settings.

3.3.2 REGULATORY SETTING

This subsection discusses the federal, state, regional and local laws, regulations, and policies that pertain to air quality in the proposed program area.

Federal Laws, Regulations, and Policies

USEPA is responsible for establishing the NAAQS, enforcing the federal Clean Air Act (CAA), and regulating transportation-related emission sources, such as aircraft, ships, and certain types of locomotives, under the exclusive authority of the federal government. USEPA also establishes vehicular emission standards, including those for vehicles sold in states other than California. (Automobiles sold in California must meet stricter emission standards established by CARB, as described below.)

Clean Air Act

The CAA required USEPA to establish NAAQS, which are shown in Table 3.3-1 above. The CAA also required each state to prepare an air quality control plan.

Corporate Average Fuel Economy Standards

The Corporate Average Fuel Economy (CAFE) standards, first enacted by Congress in 1975, require vehicle manufacturers to comply with gas mileage or fuel economy standards. These standards are set and regulated by the National Highway Traffic Safety Administration (NHTSA), with testing and data support from USEPA.

The issued rules include fuel economy standards for both light- and heavy-duty vehicles. On September 15, 2011, USEPA and NHTSA issued a final rule on greenhouse gas (GHG) standards and fuel efficiency standards for medium- and heavy-duty engines and vehicles model years 2014–2018 (76 Federal Regulations [FR] 57106). On August 28, 2012, USEPA and NHTSA issued a joint final rulemaking to establish 2017–2025 GHG emissions and CAFE standards for light-duty vehicles (77 FR 62624). In August 2018, USEPA and NHTSA proposed the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule which would amend the standards covering model years 2021-2026 (NHTSA 2019).

Non-road Emission Regulations

USEPA has adopted emissions standards for different types of non-road engines, equipment, and vehicles. For non-road diesel engines, USEPA has adopted multiple tiers of emission standards.

USEPA signed a final rule on May 11, 2004, introducing the Tier 4 emission standards, to be phased in between 2008 and 2015 (69 Code of Federal Regulations [CFR] 38957–39273, June 29, 2004). The Tier 4 standards require that emissions of PM and NOx be further reduced by about 90 percent. Such emission reductions can be achieved through the use of control technologies, including advanced exhaust gas after-treatment. To enable sulfur-sensitive control technologies in Tier 4 engines, such as catalytic particulate filters and NOx absorbers, USEPA also mandated reductions in sulfur content in non-road diesel fuels. In most cases, federal non-road regulations also apply in California, which has only limited authority to set emission standards for new non-road engines. The CAA preempts California's authority to control emissions from new farm and construction equipment less than 175 horsepower (CAA Section 209[e][1][A]) and requires California to receive authorization from USEPA for controls over other off-road sources (CAA Section 209[e][2][A]).

State Laws, Regulations, and Policies

California Clean Air Act

The California Clean Air Act (CCAA) requires nonattainment areas to achieve and maintain the health-based CAAQS by the earliest practicable date. The CCAA is administered by CARB at the state level; at the regional level, local air quality management districts are required to develop plans and control programs for attaining the state standards. Table 3.3-1 shows the CAAQS.

CARB is responsible for ensuring implementation of the CCAA, meeting state requirements of the federal CAA, and establishing the CAAQS. It is also responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB also establishes passenger vehicle fuel specifications.

In-Use Off-Road Diesel Vehicle Regulation

In 2007, CARB adopted a regulation to reduce DPM and NOx emissions from in-use, off-road, heavy-duty diesel vehicles in California. The regulation imposes limits on vehicle idling and requires fleets to reduce emissions by retiring, replacing, repowering, or installing exhaust retrofits to older engines. In December 2011, major amendments were made to the regulation, including modifications to the compliance dates for performance standards and establishing requirements for compliance with verified diesel emission control strategy technologies that reduce PM and/or NOx emissions.

Truck and Bus Regulation

On December 12, 2008, CARB approved a regulation to substantially reduce emissions of DPM, NOx, and other pollutants from existing on-road diesel vehicles operating in California. The regulation requires affected trucks and buses to meet performance standards and requirements between 2011 and 2023. Affected vehicles included on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating greater than 14,000 pounds. The

regulation was updated in 2011 and 2014 with revisions that provide more compliance flexibility and reflect the impact of the economic recession on vehicle activity and emissions. Heavy-duty trucks used during construction of Proposed Program components would be required to comply with this regulation.

Heavy-Duty On-Board Diagnostic System Regulations

In 2004, CARB adopted regulations requiring on-board diagnostic (OBD) systems on all 2007 and later model year heavy-duty engines and vehicles (i.e., vehicles with a gross vehicle weight rating greater than 14,000 pounds) in California. CARB subsequently adopted a comprehensive OBD regulation for heavy-duty vehicles model years 2010 and beyond. The heavy-duty OBD regulations were updated in 2010, 2013, and 2016 with revisions to enforcement requirements, testing requirements, and implementation schedules. Heavy-duty trucks used during construction of proposed components would be required to comply with the heavy-duty OBD regulatory requirements.

Heavy-Duty Vehicle Inspection Program

The heavy-duty vehicle inspection program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering and for compliance with engine certification labels. Any heavy-duty vehicle (i.e., a vehicle with a gross vehicle weight rating greater than 6,000 pounds) traveling in California, including vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations. Owners of trucks and buses found to be in violation are subject to penalties starting at $300 per violation. Heavy-duty trucks used during construction of Proposed Program components would be subject to the inspection program.

California Standards for Diesel Fuel Regulations

These regulations require diesel fuel with sulfur content of 15 ppm or less (by weight) to be used for all diesel-fueled vehicles that are operated in California. The standard also applies to non-vehicular diesel fuel, other than diesel fuel used solely in locomotives or marine vessels. The regulations also contain standards for the aromatic hydrocarbon content and lubricity of diesel fuels.

Airborne Toxic Control Measures

CARB regulates TACs by requiring implementation of various airborne toxic control measures (ATCMs), which are intended to reduce emissions associated with toxic substances. The following ATCMS may be relevant to the proposed Program:

Naturally Occurring Asbestos ATCMs

These regulations ensure that activities in areas containing NOA must implement asbestos dust mitigation measures, and they restrict the use of asbestos-containing material on road surfacing to less than 0.25 percent. Projects that disturb more than 1 acre in areas containing NOA must submit and obtain local air district approval of an asbestos dust mitigation plan. The plan must specify how the operation will minimize emissions and must address specific emission sources. This ATCM supersedes the BAAQMD's natural asbestos-related regulation and requires permits from the BAAQMD (as detailed below).

ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling

On October 20, 2005, CARB approved an ATCM to limit diesel-fuel commercial motor vehicle idling. This regulation was a follow-up to previous idling ATCMs, and it consists of new engine and in-use truck requirements, as well as idling emission performance standards. The regulation requires 2008 and newer model year heavy-duty diesel-fueled engines to be equipped with a nonprogrammable engine shutdown system that automatically shuts down the engine after 5 minutes of idling or, optionally, meets a stringent NOx idling emission standard (i.e., 30 grams per hour). The regulation also applies to the operation of in-use trucks, requiring operators of both in-state and out-of-state registered, sleeper berth–equipped trucks to manually shut down their engines when idling more than 5 minutes at any location within California, beginning in 2008. Affected vehicles included diesel-fueled commercial vehicles with a gross vehicle weight rating greater than 10,000 pounds. The regulation contains exceptions for equipment that requires the engine to remain on in order to operate, such as ready-mix concrete trucks. Therefore, trucks used for hauling or vendor delivery of materials for proposed program activities would be required to comply with the commercial vehicle idling regulatory requirements.

Portable Engine ATCM

The Portable Engine ATCM is designed to reduce the PM emissions from portable diesel-fueled engines rated at 50 brake horsepower or larger. This regulation requires that a fleet of portable engines must meet emission standards that reduce the amount of PM emissions over time.

Portable Equipment Registration Program

The statewide Portable Equipment Registration Program (PERP) establishes a system to uniformly regulate portable engines and portable engine–driven equipment units. After being registered in this program, engines and equipment units may operate throughout the state without the need to obtain individual permits from air districts. Owners or operators of portable engines and certain types of equipment can voluntarily register their units under this program to operate their equipment anywhere in the state. Operation of registered portable engines may still be subject to certain district requirements for reporting and notification. Engines with less than 50 brake horsepower are exempt from this program; therefore, the engines used for the proposed program would be required to comply with this regulation.

Regional Laws, Regulations, and Policies

BAAQMD is responsible for implementing air quality regulations on a regional level, including developing plans and control measures for stationary sources of air pollution to meet the NAAQS and CAAQS. BAAQMD also implements permit programs for the construction, modification, and operation of air pollution sources and enforces air pollution statutes and regulations governing stationary sources. With CARB oversight, BAAQMD also administers local regulations.

Regulations and Rules

BAAQMD has implemented several regulations and rules that are relevant to the proposed program as summarized here and listed below. BAAQMD Regulation 2, Rule 1 – General Requirements prohibits any source from causing a public nuisance, defines what equipment

is subject to permitting/new source review requirements, and exempts portable stationary equipment (e.g., generators or soil screeners) from permitting if they comply with all applicable requirements of the PERP. Other general rules, such as Regulation 6 – Particulate Matter and Visible Emissions (for dust control) would also apply to all proposed program activities. The BAAQMD's Regulation 11, Rule 14 – Asbestos-Containing Serpentine was adopted in 1991 for the purpose of controlling asbestos emissions from unpaved road surfaces and other surfacing operations. Although this regulation has been superseded by CARB's *ATCM for Surfacing Applications and for Construction, Grading, Quarrying, and Surface Mining Operations*, for applicable activities, the proposed program would be required to obtain BAAQMD approval for asbestos dust mitigation plans and notify the BAAQMD of road construction and maintenance operations (BAAQMD 2019b, BAAQMD 2020).

The BAAQMD's Regulation 5, Open Burning, forbids open burning except for activities that meet at least one of 17 burn types defined by this regulation, each of which has specific regulations, notification requirements, and permissive burn periods and conditions (BAAQMD 2019c). Potential burn types applicable to the proposed program's activities may include: 401.6 Hazardous Material, 401.12 Forest Management, 401.13 Marsh Management, and 401.15 Wildland Vegetation Management. Compliance with this regulation requires projects to notify the BAAQMD; pay applicable notification fees; and submit and receive approval from the BAAQMD of smoke management plans (SMPs) for permit types 401.13 and 401.15 prior to conducting any open burn activities. SMPs may include contingency actions to reduce exposure of smoke intrusions on sensitive receptor areas including but not limited to: halt ignitions, allow fire to burn to contingency control lines, suppress fire, begin mop up immediately or at a pre-determined time within identification of any problem, complete mop up within a pre-determined time of initiation, and discontinue mop up if favorable conditions return (BAAQMD 2019d).

The BAAQMD supports incentive programs to reduce criteria pollutant emissions within the district and has established rules and permitting requirements. The program may be subject to the following BAAQMD rules:

Regulation 2 Permits: outlines the air permitting program including exemptions and sources needing permitting

Regulation 2, Rule 1: Permits General Requirements outlines permitting requirements and exemptions.

Regulation 5, Open Burning: Restricts open burning and establishes requirements for controlled burns and burns for vegetation management and fuel reduction.

Regulation 6, Rule 1: Particulate Matter restricts emissions of PM.

Regulation 8, Rule 15: Emulsified and Liquid Asphalts limits emissions of volatile organic compounds (VOCs) caused by paving materials.

Regulation 9, Rule 8: Stationary Internal Combustion Engines limits emissions of NOx and CO from stationary internal combustion engines of more than 50 horsepower.

BAAQMD Planning

BAAQMD has adopted several air quality improvement plans, as required by state and federal regulations, to ensure progress in attaining and maintaining the NAAQS and CAAQS. These plans are described below.

2017 Bay Area Clean Air Plan

The 2017 Plan serves as an update to the 2010 Clean Air Plan and provides a regional strategy to protect public health and protect the climate (BAAQMD 2017b). The plan includes a wide range of control measures designed to decrease emissions of the air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "super-GHGs" that are potent climate pollutants in the near-term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

BAAQMD 2010 Clean Air Plan

BAAQMD adopted the *Bay Area 2010 Clean Air Plan* (BAAQMD 2010) to improve Bay Area air quality and meet public health goals. More specifically, the control strategy described in the plan is designed to reduce emissions and decrease ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce GHG emissions to protect the climate.

The 2010 plan addresses four categories of pollutants: (1) ground-level ozone and its key precursors, ROG and NOx; (2) particulate matter, primarily PM2.5, as well as precursors to secondary PM2.5; (3) air toxics; and (4) GHGs. The control strategy in the Bay Area CAP describes stationary-source measures, transportation control measures, mobile-source measures, land use and local impact measures, energy and climate measures, and further study measures to reduce air pollutants (BAAQMD 2010).

Particulate Matter Plan

To fulfill federal air quality planning requirements, BAAQMD adopted a PM2.5 emissions inventory for 2010 at a public hearing on November 7, 2012. This was transmitted to CARB for inclusion in the California State Implementation Plan. An informational report entitled *"Understanding Particulate Matter: Protecting Public Health in the San Francisco Bay Area"* was also produced to help guide BAAQMD's ongoing efforts to analyze and reduce PM in the Bay Area (BAAQMD 2012). Several measures for reducing PM emissions in the Bay Area were detailed in the multi-pollutant approaches contained in the clean air plans discussed above.

On January 9, 2013, USEPA issued a final rule determining that the San Francisco Bay Area has attained the 24-hour PM2.5 NAAQS; this action suspended federal State Implementation Plan planning requirements for the Bay Area (BAAQMD 2013).

BAAQMD CEQA Significance Thresholds

The State CEQA Guidelines recommend that criteria established by the local air district should be relied upon to make determinations of significance regarding air quality impacts. BAAQMD has developed CEQA guidelines to assist local jurisdictions in evaluating potentially adverse impacts on air quality. The most recent CEQA guidelines were updated in 2017

(BAAQMD 2017a) and the thresholds identified in the guidelines are provided below in Table 3.3-6.

Local Laws, Regulations, and Policies

Applicable local plans, policies, regulations pertaining to air quality are presented in Appendix C.

3.3.3 IMPACT ANALYSIS

This discussion describes the methodology for estimating air pollutant emissions and the significance criteria used to evaluate air quality impacts from implementing proposed maintenance activities. The impact analysis and applicable BMPs follow, and where feasible, mitigation measures are identified to reduce the level of potentially significant impacts.

Methodology

This section describes the methods used to evaluate whether the maintenance activities of the proposed program would result in significant impacts related to air quality, odors, and TACs. The proposed program would involve maintenance activities conducted on an annual basis. Emissions associated with proposed maintenance activities were quantified and include off-road equipment such as backhoes, bulldozers, excavators, pumps, and generators; material hauling vehicles; and worker commuting. Emissions of criteria pollutants were estimated using California Emissions Estimate Model (CalEEMod) Version 2016.3.2 and based on the maintenance equipment, phasing, duration, material import and export volumes, and worker quantities provided by the County which are summarized in **Appendix D**. Assumptions made for each type of maintenance activity were conservatively based on the largest possible number of maintenance sites, workers, equipment, and material import/export volumes that could be expected in a year during the life of the proposed program. Emissions from herbicide use were estimated using the California Department of Pesticide Regulation's VOC Emissions Calculator. Given the limited scope and nature of the proposed program maintenance activities, odors, NOA, and TACs were evaluated qualitatively. It is important to note that the proposed program would not substantially increase the amount or type of the County's maintenance activities conducted under existing conditions. Rather, the proposed program is intended to change the way maintenance activities are permitted and provides a consistent framework for implementing BMPs and mitigation measures. The County, however, may need to conduct slightly more maintenance work in the initial years of the program due to a backlog related to past permitting delays. This additional maintenance work may include more culvert replacement activities, bank stabilization, bridge maintenance, sediment removal activities, as well as pile burning, which has not been conducted frequently in recent years, in order to maintain fuel breaks and reduce vegetation density along park boundaries.

BAAQMD uses average daily and maximum annual emissions values for operational-related thresholds. Average daily emissions were calculated by dividing the maximum annual emissions by the number of days maintenance work is anticipated to take place in a given year. The proposed program's average daily emissions were compared against BAAQMD's mass emission thresholds (described in Table 3.3-3 below) to determine whether the proposed activities would result in a significant impact.

Criteria for Determining Significance

Based on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines and the County's environmental checklist, the proposed program would result in a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- 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;
- Expose sensitive receptors to substantial pollutant concentrations as defined by BAAQMD;
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people; or
- Generate pollutants (hydrocarbon, thermal, odor, dust or smoke particulates, radiation, etc.) that will violate existing standards of air quality onsite or in the surrounding area.

BAAQMD Thresholds

BAAQMD has established mass emission thresholds of significance to determine if air pollutant emissions would result in a cumulatively considerable net increase of criteria pollutant for which the air basin is already designated in nonattainment for AAQS. These mass emissions thresholds are shown in

Table 3.3-3.

Table 3.3-3. BAAQMD Air Quality Thresholds of Significance

Pollutant	Average Daily Emissions (pounds per day)	Annual Emissions (tons per year)
ROG	54	10
NOx	54	10
PM10 (Exhaust)	82	15
PM2.5 (Exhaust)	54	10
PM10/PM2.5 (Fugitive Dust)	Best Management Practices (BMPs)	None
Local CO	None	None

Source: BAAQMD 2017a.

BAAQMD recommends implementing BMPs for all projects to reduce fugitive dust emissions. With implementation of fugitive dust BMPs, BAAQMD considers the impact of fugitive dust emissions to be less than significant.

BAAQMD has also established screening criteria that specify an acceptable distance between sensitive receptors and common sources of odors, such as landfills and wastewater treatment plants. BAAQMD specifies that an odor source with five or more confirmed complaints per year averaged over 3 years would be considered to have a significant impact on receptors within the screening distance. BAAQMD acknowledges that a lead agency has discretion under CEQA to use other established odor detection thresholds or other significance thresholds for CEQA review.

As described above in "Methodology", TAC risks were evaluated qualitatively, given the scope and nature of the proposed program, and the varying program locations.

Environmental Impacts

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plans (*Less than Significant*)

The proposed program would have a significant impact if it would conflict with or impair implementation of applicable air quality plans that address the SFBAAB's existing nonattainment status of ozone, PM2.5, and PM10 for state and/or federal air quality standards. Applicable air quality plans include the Bay Area 2010 Clean Air Plan and the 2017 Bay Area Clean Air Plan, which is an update to the 2010 plan.

The Bay Area 2010 Clean Air Plan contains a control strategy that includes measures for stationary sources, mobile sources, transportation controls, land use and local impacts, energy and climate, and additional measures to control ozone and its precursors (ROG and NOx), PM10, PM2.5, and TACs. The 2017 Plan (BAAQMD 2017b) similarly provides ozone control strategies related to numerous potential ozone precursor sources, including stationary sources, transportation, natural and working lands, waste management, energy, and buildings. In particular, Policy TR-19, which provides incentives for lower emission trucks, and Policy TR-22, which provides incentives for the use of lower-emitting construction equipment, would reduce transportation- and construction-related ozone precursor emissions (BAAQMD 2017b).

As discussed in more detail in Impact AQ-2 and Appendix D, maintenance activities that occur under baseline conditions are similar in type and scale at individual sites to those in the proposed program, though several activities would occur at a higher frequency under the proposed program (e.g. culvert replacement, bank stabilization, sediment removal). Pile burning may also occur at a higher frequency. The proposed program would involve temporary maintenance-related emissions, would not result in induced growth, and would not result in a permanent new source of emissions. As described in Impact AQ-2 below, annual emissions from the proposed program could initially be higher than existing levels but would be lower than existing emissions by the end of the program's 5-10-year term through complying with statewide vehicle emission regulations. For all criteria pollutant emissions, the existing and potential program-related emissions would be less than the BAAQMD's thresholds and in compliance with the 2017 Plan goals of meeting attainment for these criteria pollutants. In addition, implementation of the BMPs listed below would reduce or prevent emissions of pollutants (NOx, PM2.5 and/or PM10) covered by applicable air quality plans. Furthermore, the County would conduct pile burning and other maintenance activities in accordance with the applicable BAAQMD regulations.

Applicable Best Management Practices

The County would implement the following BMPs to reduce NOx, PM10, and/or PM2.5 emissions. A description of each BMP is provided in Table 2-3 in Chapter 2:

- GEN-9: Vehicle Maintenance and Parking
- GEN-10: Equipment Maintenance and Fueling
- GEN-19: Dust Management Controls
- GEN-23: Fire Prevention
- EC-7: Hydroseeding

Conclusion

The proposed program would not result in induced growth and would not result in a permanent new source of emissions. Implementation of the above-listed BMPs would further minimize PM10 and PM2.5 emissions. Therefore, the proposed program would not conflict with applicable air quality plans, and this impact would be **less than significant**.

Impact AQ-2: Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for which the Project Region is in Non-attainment (*Less than Significant*)

The proposed program would emit criteria pollutants via pile burning and through the combustion of fossil fuels by construction equipment, worker vehicles, and material hauling trucks for maintenance activities. In addition, the proposed program's grading and excavation activities would disturb soils and generate fugitive dust (particulate matter emissions). Implementation of BMP GEN-19 (Dust Management Controls) would reduce NOx and other criteria pollutant emissions by minimizing idling times of construction equipment and ensuring that all equipment is properly maintained and tuned in accordance with manufacturer's specifications. In addition, the dust control measures included in BMP GEN-19 would minimize fugitive dust emissions during project construction activities and would be in compliance with the BAAQMD's requirements.

The nonattainment status of ozone, PM10, and PM2.5 in the SFBAAB is considered a significant cumulative impact. The BAAQMD has established significance thresholds that apply to cumulative impacts, which were developed considering the other sources of air pollutants and growth of emissions in the air basin. A project that does not exceed these significance thresholds would not considerably contribute to any cumulative air quality impacts.

As shown in Tables 3.3-4 and 3.3-5, with implementation of BMP GEN-19 in accordance with the BAAQMD's requirements, emissions of all pollutants would be lower than the BAAQMD significance thresholds. Emissions associated with the proposed program would not be permanent nor would they contribute to added emissions once implementation of the proposed program's maintenance activities are complete.

Table 3.3-4. Average Daily Criteria Pollutant Emissions (Pounds / Day)

Source	ROG	NOx	PM10 (Exhaust)	PM2.5 (Exhaust)
Existing Emissions				
Vehicles/Equipment	3.72	36.32	1.46	1.35
Pesticide Use	1.15			
Total	4.87	36.32	1.46	1.35
2020 Emissions				
Vehicles/Equipment	4.77	44.48	1.81	1.68
Burn Pile Emissions	6.00	4.95	7.43	6.95
Pesticide Use	1.15			
Total	11.91	49.43	9.23	8.63
Increase from Existing	*7.04*	*13.11*	*7.77*	*7.28*
2030 Emissions				
Vehicles/Equipment	3.68	13.68	0.34	0.34
Burn Pile Emissions	6.00	4.95	7.43	6.95
Pesticide Use	1.15	-	-	-
Total	10.82	18.63	7.77	7.29
Increase from Existing	*5.95*	*-17.68*	*6.31*	*5.95*
BAAQMD Threshold	**54**	**54**	**82**	**54**

Source: Data compiled by Horizon in 2019 and 2020 (refer to Appendix D). Average emissions calculated by converting annual emissions to pounds per day and assuming 260 work days in a year. Exhaust-related PM10 and PM2.5 emissions are provided for a comparison to the applicable BAAQMD thresholds, which relate to exhaust emissions only. Dust control measures included in BMP GEN-19 would minimize fugitive dust emissions during project construction activities and would be in compliance with the BAAQMD's requirements to implement dust control BMPs.

Table 3.3-5. Annual Criteria Pollutant Emissions (Tons / Year)

Source	ROG	NOx	PM10 (Exhaust)	PM2.5 (Exhaust)
Existing Emissions				
Vehicles/Equipment	0.48	4.72	0.19	0.18
Pesticide Use	0.149			
Total	0.63	4.72	0.19	0.18
2020 Emissions				
Vehicles/Equipment	0.62	5.78	0.23	0.22
Burn Pile Emissions	0.78	0.64	0.97	0.90
Pesticide Use	0.149	-	-	-
Total	1.55	6.43	1.20	1.12
Increase from Existing	0.92	1.70	1.01	0.95

2030 Emissions				
Vehicles/Equipment	0.48	1.78	0.04	0.04
Burn Pile Emissions	0.78	0.64	0.97	0.90
Pesticide Use	0.149	-	-	-
Total	1.41	2.42	1.01	0.95
Increase from Existing	*0.77*	*-2.30*	*0.82*	*0.77*
BAAQMD Threshold	**10**	**10**	**15**	**10**

Source: Data compiled by Horizon in 2019 and 2020 (refer to Appendix D). Exhaust-related PM10 and PM2.5 emissions are provided for a comparison to the applicable BAAQMD thresholds, which relate to exhaust emissions only. Dust control measures included in BMP GEN-19 would minimize fugitive dust emissions during project construction activities and would be in compliance with the BAAQMD's requirements to implement dust control BMPs.

Applicable Best Management Practices

The County would implement the following BMP to reduce this impact. This BMP is presented in Table 2-3 in Chapter 2.

- GEN-19: Dust Management Controls

Conclusion

Emissions from the proposed program's activities would be below BAAQMD thresholds. Implementation of BMP GEN-19 would help reduce the program's NOx, PM10, and PM2.5 emissions. Therefore, this impact would not be cumulatively considerable and would be **less than significant**.

Impact AQ-3: Expose Sensitive Receptors to Substantial Pollutant Concentrations (*Less than Significant*)

Maintenance activities would occur mostly along creeks, roads, trails, culverts, and at other County-owned facilities. Given the scale of the proposed program, unknown location of future maintenance sites, and limited duration at each maintenance site, individual sensitive receptors have not been identified. However, it is assumed that receptors in the vicinity of program activities could include any of the receptor types mentioned previously, in particular single-family residences in rural, suburban, and urban settings.

The pollutants of concern and TACs that would affect sensitive receptors are particulates, specifically PM10 and PM2.5 contained in fugitive dust and pile burning emissions, and DPM from construction equipment. Implementation of BMP GEN-19 would involve dust control measures, such as periodic watering of disturbed areas, to reduce fugitive dust emissions during construction. Pile burning activities would be conducted in accordance with the BAAQMD's requirements under Regulation 5, Open Burning. Relevant conditions from Regulation 5 that minimize potential impacts on sensitive receptors include but are not limited to: limiting fire management activities during wind conditions that would direct smoke drift toward a populated area (Term 5-111.3), and requiring the preparation and BAAQMD-approval of SMPs for permit types 401.13 and 401.15 prior to conducting any open burn activities. Further, as described above in Section 3.3.2, *Regulatory Setting*, under "Regional Laws, Regulations, and Policies", SMPs include contingency actions to reduce

unexpected exposure of smoke intrusions on sensitive receptor areas. Implementation of potential contingency actions, such as suppressing the fire and stopping any new ignitions, as identified in the SMP and approved by the BAAQMD, would further minimize the potential for any receptors to be affected by smoke from the proposed program's pile burning activities. The proposed program's burn activities would be limited to specific park areas as detailed in Chapter 2, *Program Description*, which are largely located away from densely populated residential/sensitive receptor areas. Because maintenance and burn activities would be temporary, occur infrequently at any specific location, and be conducted in full compliance with all applicable BAAQMD regulations, they would not emit substantial quantities of PM near individual sensitive receptors.

DPM exposure for short durations is generally not quantified, as cancer potency factors are based on lifetime exposure and there is considerable uncertainty in trying to evaluate the cancer risk from maintenance activities that would last only a small fraction of a lifetime (California Governor's Office of Environmental Health Hazard Assessment 2015).

With implementation of BMP GEN-19 and compliance with the BAAQMD's applicable permits and regulations, the proposed program would not pose long-term or substantial health risks to nearby residents and workers in the vicinity of the program's anticipated maintenance sites.

Applicable Best Management Practices

The County would implement the following BMP to reduce this impact. This BMP is presented in Table 2-3 in Chapter 2.

- GEN-19: Dust Management Controls

Conclusion

With implementation of BMP GEN-19 and compliance with the BAAQMD's applicable permits and regulations, the proposed program's impact on sensitive receptors from fugitive dust and other TACs would be **less than significant**.

Impact AQ-4: Result in Other Emissions Such as Odors Adversely Affecting a Substantial Number of People (*Less than Significant with Mitigation*)

Maintenance activities associated with the proposed program would not generate permanent or long-term objectionable odors but could generate odors related to excavated material or stockpiled vegetation, smoke from burn piles, and the operation of gasoline- or diesel-powered equipment. Odors may also be associated with decaying organic material contained in excavated or dredged material, and vegetative debris piles as they are drying out prior to burning. Odors associated with these organic material piles may result in a potentially significant impact on local sensitive receptors if the piles remain on site and are in close proximity to sensitive receptors.

In addition, smoke from burn piles could potentially result in significant odor-related impacts if the burn activities were conducted near sensitive receptors and in such quantities that a substantial number of people were affected. However, as described under Impact AQ-3, above, the County would (1) implement BMP BIO-23, which requires coordination with CAL FIRE and burning only on days when danger of wildfire is low, and (2) conduct pile burning

in compliance with the BAAQMD's Regulation 5 and corresponding restrictions and requirements, both of which would minimize odor effects on nearby sensitive receptors. Compliance with Regulation 5 would include implementation of SMP-identified contingency actions to minimize unexpected smoke exposure of sensitive receptor areas. Furthermore, the County would only perform burn activities temporarily at any given location and primarily in the following County Parks: Edgewood County Park, San Bruno Mountain State and County Park, San Pedro Valley Park, Huddart Park, Wunderlich County Park, Sam McDonald County Park, Memorial County Park, and Pescadero Creek County Park. Several of these parks are not located near densely populated areas (e.g., Sam McDonald, Memorial and Pescadero Creek County parks).

The proposed program's activities would not include any land uses or operation types identified by the BAAQMD as most likely to cause odors (BAAQMD 2017). Odors associated with gasoline- or diesel-powered equipment would not be significant since they would occur temporarily at any given location. To address the potential impacts of stockpiling and burning activities, **Mitigation Measure AQ-1** would be implemented and would minimize potential odor-related impacts of the proposed program.

Applicable Best Management Practices

- BMP BIO-23: Burn Pile Measures

Conclusion

Implementation of Mitigation Measure AQ-1 would ensure that any stockpiled material on the maintenance site would be placed at a distance as far as possible from sensitive receptors until they could be removed. In addition, burning activities would take place as far away from sensitive receptors as possible. Therefore, the potential for the proposed program to create objectionable odors that would affect a substantial number of people would be **less than significant with mitigation**.

> **Mitigation Measure AQ-1: Locate Stockpiles of Odorous Materials and Pile Burning Activities at a Distance from Sensitive Receptors**
>
> The County or its contractor(s) will be required to handle stockpiles of potentially odorous excavated or dredged material, or other potentially odorous materials, in a manner that avoids affecting residential areas or other sensitive receptors to the extent feasible. Stockpiles will be placed as far as possible from these receptors and will be covered if immediate off-site disposal is not feasible. Stockpiles for pile burning and pile burning activities will be located as far from sensitive receptors as possible.

Impact AQ-5: Generate pollutants that will violate existing standards of air quality onsite or in the surrounding area (*Less than Significant*).

As discussed in Impact AQ-2, the proposed program would emit pollutants via burn piles and through the combustion of fossil fuels by construction equipment, worker vehicles, and material hauling trucks. In addition, the proposed program's grading and excavation activities would disturb soils and generate fugitive dust (particulate matter emissions). These activities would be temporary and infrequent at any specific location and would not create permanent or long-term sources of emissions. As demonstrated in Impacts AQ-2 and AQ-3, the proposed program, including burning activities, would not result in emissions of criteria

pollutants, particulate matter or TAC pollutants above BAAQMD thresholds and would not expose nearby receptors to substantial pollutant concentrations. In addition, the proposed program's pile burning activities would be conducted in compliance with the applicable BAAQMD Regulation 5, Open Burning, with implementation of the standards in the regulation and contingency actions designed to minimize the impacts of the burn-related air emissions and potential to violate existing air quality standards. Total traffic trips related to the proposed program would be substantially less than the BAAQMD's screening thresholds for carbon monoxide, which are approximately 24,000 and 44,000 vehicles per hour at affected intersections with and without air mixing limitations, respectively (BAAQMD 2017). Also, implementation of Mitigation Measure AQ-1, while not necessary to reduce this impact to a less-than-significant level, would further minimize the proposed program's odor impacts and ensure compliance with existing air quality standards. Therefore, the proposed program would not generate pollutants that would violate existing standards of air quality in the surrounding area.

Applicable Best Management Practices

The County would implement the following BMP to reduce this impact. This BMP is presented in Table 2-3 in Chapter 2.

- GEN-19: Dust Management Controls

Conclusion

The proposed program would not generate pollutants that would violate existing standards of air quality onsite or in the surrounding area. Implementation of BMP GEN-19 would limit generation of DPM, particulate matter, and other pollutants. Additionally, while not necessary to reduce this impact to a less-than-significant level, implementation of Mitigation Measure AQ-1 would ensure that odors generated by proposed maintenance activities do not violate existing air quality standards. Therefore, this impact would be **less than significant**.

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3.4 BIOLOGICAL RESOURCES

This section presents the environmental setting, regulatory setting, and potential impacts of the County of San Mateo Routine Maintenance Program (proposed program) related to biological resources. The impact analysis describes the methodology used to evaluate significance and then presents the impact evaluation.

3.4.1 ENVIRONMENTAL SETTING

To identify existing biological conditions in the program area, the following information sources, among others, were reviewed:

- documents prepared for other projects in San Mateo County, including:
  - San Bruno Mountain Area Habitat Conservation Plan (County of San Mateo 1982),
  - San Mateo County Parks Vegetation Resources (Rana Creek Habitat Restoration 2002),
  - Final Report on NFWF Grant for Habitat Restoration at Edgewood Natural Preserve (Weiss 2002),
  - Draft Environmental Impact Report for the San Francisco Public Utilities Commission's Lower Crystal Springs Dam Improvement Project (City and County of San Francisco 2010),
  - Butano Creek at Pescadero Creek Road Sediment Removal Plan Biological Assessment (H. T. Harvey & Associates 2016),
  - San Mateo County Stream Crossing Inventory and Fish Passage Evaluation Final Report (Ross Taylor and Associates 2004),
  - Endangered Species Act Section 7(a)(2) Biological Opinion, and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Program for Restoration Projects within the NOAA Restoration Center's Coastal California (National Marine Fisheries Service [NMFS] 2016a);
- data on special-status species occurrences (San Mateo County Breeding Bird Atlas [Sequoia Audubon Society (SAS) 2001], The Rare and Endangered Plants of San Mateo and Santa Clara County [Corelli and Chandik 1995], Marbled Murrelet Landscape Management Plan for Zone 6 [Halbert and Singer 2017], California Natural Diversity Data Base [CNDDB] 2019, U.S. Fish and Wildlife Service [USFWS] 2019);
- California Rare Plant Ranks (CRPR, formerly known as California Native Plant Society [CNPS] lists; CNPS 2019) and applicable records; and
- the Jepson Manual, second edition (Baldwin et al. 2012).

Existing Land Uses, Natural Communities, and Habitats

The topography of San Mateo County is extremely varied, with elevations ranging from sea level to 2,572 feet atop the Santa Cruz Mountains (County of San Mateo 1986). As described in Chapter 2, *Project Description,* San Mateo County is generally divided by the Santa Cruz Mountains into a "Bayside" (east of the mountain ridges and bordering San Francisco Bay [Bay]) and a "Coastside" (west of the mountain ridges and bordering the Pacific Ocean). The Coastside is divided by the Coastal Zone Boundary; within the Coastal Zone, provisions of San Mateo County's Local Coastal Program apply. To facilitate characterization of the biological resources present, or potentially present, within the program area (defined as all County parks and unincorporated areas maintained by the County), we have further divided San Mateo County into subwatersheds[1] (**Figure 3.4-1**).

Vegetation communities and habitats within the program area are shaped by the ecological forces at work in the region. Precipitation, topography, soil, climate, the frequency of natural disturbance, and human management are all factors that affect the type and pattern of communities present. Overall, San Mateo County is characterized by dry, mild summers and moist, cool winters. However, temperatures are strongly influenced by the San Francisco Bay to the east, the Pacific Ocean to the west, and the Santa Cruz Mountains, which results in a variety of microclimates. The Coastside experiences a marine climate, characterized by cool, foggy summers and relatively wet winters while the Bayside is generally warmer and sunnier.

Mapping of habitats within the program area was conducted using Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) data provided by the U.S. Forest Service (2014). The CALVEG classification system was used for vegetation typing and cross-walked to the California Wildlife Habitat Relationship System (CWHR) (Meyer and Laudenslayer 1988). **Figure 3.4-2** shows the CALVEG habitat mapping, which has a minimum mapping unit of 2.5 acres. The CALVEG mapping captures general habitat conditions at a map scale unit larger than what would be appropriate for individual project-level analysis because habitat features smaller than 2.5 acres are not included. Field surveys would be necessary to accurately delineate habitats at a specific maintenance site.

Twenty-two habitats/land uses were identified within the program area (see Figure 3.4-2). Because the program area is large and contains a wide-variety of natural communities, these habitats have been grouped into nine general categories: aquatic/wetland, beaches/dunes/coastlines, forest/woodland, riparian, scrub/shrubland, grasslands, urban, cropland, and barren, and the composition of each general type of community is described below. The dominant and characteristic plant and animal species for each of these habitats are described in detail in Chapter 4 of the Maintenance Manual (Appendix A).

[1] Hydrologic Unit Code (HUC) – 12, as defined by the U.S. Geological Survey (USGS). HUC 4 represents the subregion level, delineating large river basins; HUC 8 maps the subbasin level, analogous to medium-sized river basins; and HUC 12 is a more local sub-watershed level that captures tributary systems.

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Figure **3.4-1. Subwatershed** Map

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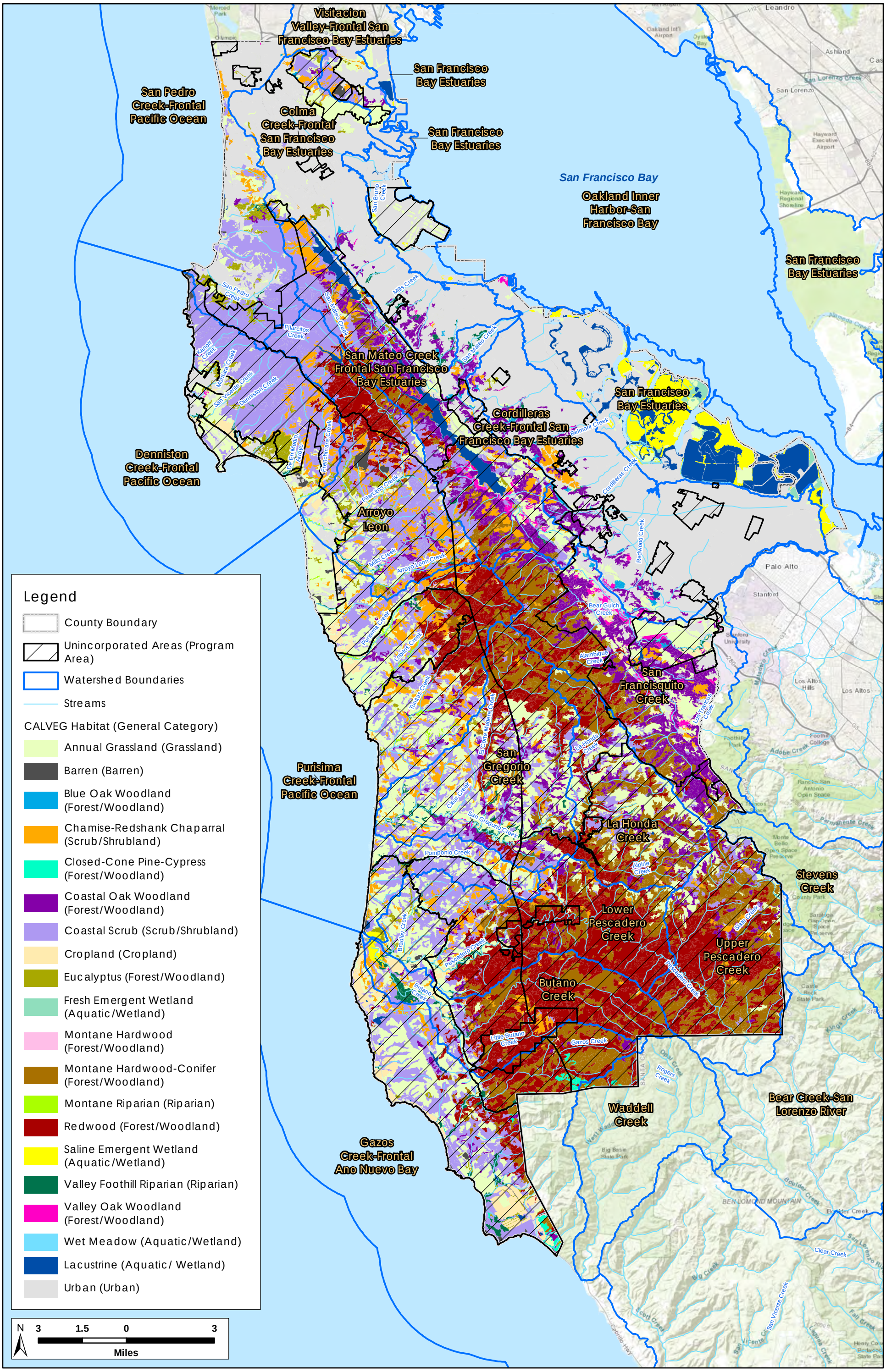

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Figure **3.4-2.** Vegetation Communities Map
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Aquatic and Wetland Communities

Aquatic and wetland communities are periodically to perennially saturated or inundated. These communities provide many important environmental functions, such as recycling nutrients, purifying water, attenuating floods, and recharging groundwater. In addition, they serve as habitat for many aquatic species. Aquatic and wetland communities present in the program area are lacustrine, saline emergent wetland, wet meadow, and Bay margin.

Beaches, Dunes, and Coastlines

Beaches, dunes, and coastlines, also known as coastal strand, are found along the Pacific coast of the program area. Because these areas are often small, occurring in a narrow coastal band, and larger bare dune systems have been included as barren lands by CALVEG mapping, this habitat type is not depicted in Figure 3.4-2. However, beaches, dunes, and coastlines have been included as a separate category herein because of the importance of these habitats and the unique species they support.

Forest/Woodland Communities

In the program area, forest/woodland communities are represented by blue oak woodland, closed-cone pine-cypress, coastal oak woodland, eucalyptus, montane hardwood, montane hardwood-conifer, redwood, and valley oak woodland. Forested communities in the program area are structurally similar and support dense stands of mature trees that form overlapping canopies. Different forest/woodland communities can be distinguished from one another by the relative abundance of different tree species, which is largely controlled by moisture gradients and soil characteristics. Woodland communities differ from forests in having more open canopies. They generally occur in the transition zone between forests and scrub or grassland communities.

Riparian Communities

Riparian communities occur at the interfaces between terrestrial and aquatic communities. In California, riparian habitats generally support exceptionally rich animal communities even though they occupy a limited amount of the land cover. The importance of riparian areas in San Mateo County far exceeds their minor proportion of the total acreage of the county because of their prominent location within the landscape and the intricate linkages between terrestrial and aquatic communities (Gregory et al. 1991). The presence of at least seasonal (and often year-round) water and abundant invertebrates provides foraging opportunities for many species, and the diverse habitat structure provides cover and nesting opportunities. In the program area, riparian communities are represented by montane riparian and valley foothill riparian habitats.

Scrub/Shrubland Communities

Scrub/shrubland communities are characterized by shrub-dominated landscapes, with few to no trees, and are composed primarily of drought tolerant species. Although structurally similar to one another, different scrub/shrubland communities can be distinguished based on different suites of dominant shrub species. In the program area, scrub/shrubland communities are represented by chamise-redshank chaparral and coastal scrub habitats.

Grasslands

Grassland communities are dominated by grasses and may also contain a diverse set of forbs. These communities provide many important environmental functions for soil stabilization, increasing water infiltration, and nutrient cycling. In addition, grasslands serve as habitat for many special-status species. In the program area, both annual and perennial grasslands occur. Although the perennial grassland habitat type is not included in the CALVEG mapping shown on Figure 3.4-2, due to the small scale of the area it occupies, it has been included as a separate category here due to the unique species this habitat type supports. Annual grasslands typically contain non-native grasses as the dominant species while perennial grasslands are dominated by native, long-lived species.

Urban

The urban land cover type is described as a developed habitat. It encompasses variable developed communities, including buildings and residences; streets with sidewalks and parking lots; and lawns, parks, and planting strips. Urban habitat is common in established towns, cities, and population centers; it can also occur in suburban and rural settings.

Cropland

Cropland is an agricultural use that includes diverse plant cover as a result of the diversity of crops that are grown in the program area. Annual crops are common but perennial crops also occur. Vegetation height can vary from tall cornfields to short strawberry fields. Annual crops may include several rotations throughout the year. Often croplands occur on flat landforms or gently rolling hills. In flat areas, the ground has often been levelled previously. Irrigated farming or dryland farming may occur. In San Mateo County, cropland occurs in the Coastside and is often associated with developed areas with farms and rural residential housing.

Barren

Barren areas have exposed surfaces such as bedrock, cliffs, interior sandy or gypsum areas, or other similar unvegetated or very sparsely vegetated areas. Urban areas are not mapped as barren while quarries and open pit mine sites are included in this land cover type. In the program area, large barren areas are located in Arroyo Leon and are associated with the Vulcan Pilarcitos Quarry and the Ox Mountain landfill. Other bare areas in the program area include fallow fields or fields with diminutive crops so that aerial image interpretations would define them as barren. This is the case in the barren locations surrounding the Half Moon Bay Golf Links in the Purisima Creek-Frontal Pacific Ocean watershed. In barren sites, overall plant cover is extremely limited as is native plant cover.

Special-Status Plant and Animal Species

Special-Status Plants

For purposes of this evaluation, special-status plants are plant species that are:

- Listed under the federal Endangered Species Act (ESA) as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under the California Endangered Species Act (CESA) as threatened, endangered, rare, or a candidate species;

- Included in the CNPS's CRPR designations as rare or endangered with ranks of 1A, 1B, 2A, or 2B (defined in footnote of **Table 3.4-1**); or
- Included in the CRPR with ranks 3 or 4 (defined in footnote in Table 3.4-1).

A list of 107 special-status plant species known or thought to have potential for occurrence in San Mateo County was compiled using CNPS lists (CNPS 2019) and CNDDB records (CNDDB 2019) (**Figure 3.4-3,** Sheets 1 and 2). Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects on these species may be considered significant. Impacts on plants that are listed by the CNPS as CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as CRPR 1B or 2, impacts on them are less frequently considered significant.

Table 3.4-1 identifies the remaining 100 special-status plant species that are federally or state endangered or threated, candidates for federal or state listing, plants that are considered "state rare", or CRPR 1, 2, 3 or 4 species, and that are known to have occurred or may occur in San Mateo County. Their distribution, legal status, general habitat requirements, and known occurrences in the program area are also provided in Table 3.4-1.

Special-Status Animals

For purposes of this evaluation, special-status animals are species that are:

- Listed under the ESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species;
- Listed under the CESA as threatened, endangered, or a candidate species;
- Designated by California Department of Fish and Wildlife (CDFW) as a California species of special concern; or
- Listed in the California Fish and Game Code (F&G) as a fully protected species (birds at Section3511, mammals at Section4700, reptiles and amphibians at Section5050, and fish at Section5515).

Table 3.4-2 identifies 52 special-status animal species that are known to occur or may occur in San Mateo County and characterizes their potential to occur in the program area. Their distribution, legal status, general habitat requirements, and known occurrences in the program area are also provided and **Figure 3.4-4** (Sheets 1 and 2) show known occurrences in San Mateo County. Expanded descriptions are included in Appendix F of the Maintenance Manual (Appendix A) for those species that may be adversely affected by maintenance activities.

Several special-status animal species occur in the program area as nonbreeding transients, foragers, or migrants, but they do not breed in or very close to the proposed activity areas, and/or suitable nesting/breeding habitat is absent from the program area. These species are the green sturgeon (*Acipenser medirostris*), longfin smelt (*Spirinchus thaleichthys*), California black rail (*Laterallus jamaicensis coturniculus*), short-eared owl (*Asio flammeus*), and western red bat (*Lasiurus blossevillii*).

Table 3.4-1. Special-Status Plant Species with Potential to Occur in the Program Area

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Federally Listed or State-listed Endangered and Threatened Plant Species			
San Mateo thorn-mint (*Acanthomintha duttonii*)	FE, SE, CRPR 1B.1	Serpentine in grassland or chaparral	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watershed. It is also known from the Cordilleras Creek-Frontal San Francisco Bay Estuaries Watershed, but this occurrence is not within an unincorporated portion of San Mateo County.
San Bruno Mountain manzanita (*Arctostaphylos imbricata*)	SE, CRPR 1B.1	Rocky sites in chaparral or coastal scrub	**Present.** The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries and Colma Creek-Frontal San Francisco Bay Estuaries Watersheds.
Pacific manzanita (*Arctostaphylos pacifica*)	SE, CRPR 1B.2	chaparral, coastal scrub	**Present.** The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries Watershed.
Robust spineflower (*Chorizanthe robusta* var. *robusta*)	FE, CRPR 1B.1	Sandy or gravelly areas in coastal chaparral, openings in woodlands, coastal scrub, coastal grassland	**Absent.** Robust spineflower is presumed extirpated from San Mateo County.
Crystal Springs fountain thistle (*Cirsium fontinale* var. *fontinale*)	FE, SE, CRPR 1B.1	Serpentine seeps	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries and Cordilleras Creek-Frontal San Francisco Bay Estuaries Watersheds.

Notes: [1]Status Codes:

Federal

FE Listed as endangered under the Endangered Species Act
FT Listed as threatened under the Endangered Species Act

State

SE Listed as endangered under the California Endangered Species Act
ST Listed as threatened under the California Endangered Species Act
SC Candidate for listing under the California Endangered Species Act
SR Listed as rare under the Native Plant Protection Act

CRPR = California Rare Plant Rank

1B Plants rare, threatened, or endangered in California and elsewhere
3 Plants about which information is needed-a review list
4 Plants of limited distribution-a watch list
.1 seriously endangered in California
.2 fairly endangered in California
.3 not very endangered in California

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
San Mateo woolly sunflower (*Eriophyllum latilobum*)	FE, SE, CRPR 1B.1	Often on serpentine in montane hardwood, oak woodlands	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the San Francisquito Creek, La Honda Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, and Upper Pescadero Creek Watersheds.
Butano Ridge cypress (*Hesperocyparis abramsiana* var. *butanoensis*)	FE, SE, CRPR 1B.2	Sandstone derived soils in closed cone conifer, Montane hardwood	**Present.** The species has been recorded in the program area in the Butano Creek Watershed and suitable habitat is present in Lower Pescadero Creek, Upper Pescadero Creek, Gazos Creek-Frontal Año Nuevo Bay, and Waddell Creek Watersheds.
Marin western flax (*Hesperolinon congestum*)	FT, ST, CRPR 1B.1	Serpentine in grassland or chaparral	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watershed. It is also known from the Cordilleras Creek-Frontal San Francisco Bay Estuaries Watershed, but this occurrence is not within an unincorporated portion of San Mateo County.
San Francisco lessingia (*Lessingia germanorum*)	FE, SE, CRPR 1B.1	Remnant dunes in coastal scrub	**Present.** The species has been recorded in the program area in the Colma Creek-Frontal San Francisco Bay Estuaries Watershed.
Coast yellow leptosiphon (*Leptosiphon croceus*)	SC, CRPR 1B.1	Coastal scrub on bluffs, coastal grassland	**Present.** The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Point Reyes meadowfoam (*Limnanthes douglasii* ssp. *sulphurea*)	SE, CRPR 1B.2	Coastal grassland, freshwater wetlands, vernal pools	**Present.** The species has been recorded in the program area in the Butano Creek Watershed.
Dudley's lousewort (*Pedicularis dudleyi*)	SR, CRPR 1B.2	Coastal chaparral, montane hardwood, montane hardwood conifer, oak woodlands, grassland	**Present.** The species has been recorded in the program area in the Lower Pescadero Creek and Upper Pescadero Creek Watersheds and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay, and Waddell Creek Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
White-rayed pentachaeta (*Pentachaeta bellidiflora*)	FE, SE, CRPR 1B.1	Oak woodlands, montane hardwood, often on serpentine in grassland	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watersheds and suitable habitat is present in the Visitacion Valley-Frontal San Francisco Bay Estuaries and Cordilleras Creek-Frontal San Francisco Bay Estuaries Watersheds.
San Francisco popcorn-flower (*Plagiobothrys diffusus*)	SE, CRPR 1B.1	Coastal grassland	**Present.** The species has been recorded in the program area in the Colma Creek-Frontal San Francisco Bay Estuaries and Gazos Creek-Frontal Año Nuevo Bay Watersheds and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, San Gregorio Creek, and Purisima Creek-Frontal Pacific Ocean Watersheds.
Hickman's cinquefoil (*Potentilla hickmanii*)	FE, SE, CRPR 1B.1	Bluffs in coastal scrub, closed on conifer, freshwater wetlands, wet meadows	**Present.** The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, Arroyo Leon, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Two-fork clover (*Trifolium amoenum*)	SE, CRPR 1B.1	Bluffs in coastal scrub and sometimes on serpentine in grassland	**Absent.** There are no known extant populations of two-fork clover in San Mateo County.
CNPS-Listed Plant Species (CRPR 1 and 2)			
Blasdale's bent grass (*Agrostis blasdalei*)	CRPR 1B.2	Bluffs in coastal scrub and coastal grassland	**Present.** The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean and Gazos Creek-Frontal Año Nuevo Bay Watersheds and suitable habitat is present in San Pedro Creek-Frontal Pacific Ocean, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, and Butano Creek Watersheds.
Franciscan onion (*Allium peninsulare* var. *franciscanum*)	CRPR 1B.2	Volcanic or clay soils, often on serpentine, in grassland, oak woodlands, or montane hardwood	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, and San Francisquito Creek Watersheds and suitable habitat is present in Colma Creek-Frontal San Francisco Bay Estuaries and Arroyo Leon Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Bent-flowered fiddleneck (*Amsinckia lunaris*)	CRPR 1B.2	Grassland, bluffs in coastal scrub, montane hardwood, oak woodlands	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Anderson's manzanita (*Arctostaphylos andersonii*)	CRPR 1B.2	Openings or edges in redwood, chaparral, montane hardwood	**Present.** The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Upper Pescadero Creek, and Butano Creek Watersheds and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Gazos Creek-Frontal Año Nuevo Bay, and Waddell Creek Watersheds.
Montara manzanita (*Arctostaphylos montaraensis*)	CRPR 1B.2	Coastal chaparral or coastal scrub	**Present.** The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, and Arroyo Leon Watersheds and suitable habitat is present in Colma Creek-Frontal San Francisco Bay Estuaries, and San Mateo Creek-Frontal San Francisco Bay Estuaries Watersheds.
Kings Mountain manzanita (*Arctostaphylos regismontana*)	CRPR 1B.2	Granitic or sandstone derived soils in montane hardwood, chaparral, redwood	**Present**. The species has been recorded in the program area in the San Francisquito Creek, La Honda Creek, and San Gregorio Creek Watersheds and suitable habitat is present in the Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay, and Waddell Creek Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Coastal marsh milk-vetch (*Astragalus pycnostachyus* var. *pycnostachyus*)	CRPR 1B.2	Salt marsh, coastal scrub, coastal grassland, saline wetlands	**Present**. The species has been recorded in the program area in the Purisima Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Francisco Bay Estuaries, Denniston Creek-Frontal Pacific Ocean, San Gregorio Creek, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)	CRPR 1B.1	Bay margin	**May be Present**. Suitable habitat is present in the program area for this species in the San Francisco Bay Estuaries and Cordilleras Creek-Frontal San Francisco Bay Estuaries Watersheds.
Pappose tarplant (*Centromadia parryi* ssp. *parryi*)	CRPR 1B.2	coastal scrub, coastal grassland, bay margin, saline wetlands	**May be Present**. Suitable habitat is present in the program area for this species in the San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Point Reyes bird's-beak (*Chloropyron maritimum* ssp. *palustre*)	CRPR 1B.2	Bay margin	**Absent.** Point-Reyes bird's beak is presumed extirpated from San Mateo County.
San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*)	CRPR 1B.2	Sandy areas in coastal scrub, coastal grassland	**Present**. Suitable habitat is present in the program area for this species in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, and San Pedro Creek-Frontal Pacific Ocean Watersheds.
Franciscan thistle (*Cirsium andrewsii*)	CRPR 1B.2	Sometimes on serpentine in coastal scrub, coastal grassland, montane	**Present**. The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean Watershed.
San Francisco collinsia (*Collinsia multicolor*)	CRPR 1B.2	Sometimes on serpentine in closed cone coniferous forest, coastal scrub	**Present**. Suitable habitat is present in the program area for this species in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Western leatherwood (*Dirca occidentalis*)	CRPR 1B.2	Moist areas in closed cone pine, chaparral, oak woodland, montane hardwood, riparian forest, redwood	**Present**. Suitable habitat is present in the program area for this species in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Sand-loving wallflower (*Erysimum ammophilum*)	CRPR 1B.2	Sandy and openings in coastal chaparral or coastal scrub	**May be Present**. Suitable habitat is present in the program area for this species in the Gazos Creek-Frontal Año Nuevo Bay Watershed.
Minute pocket moss (*Fissidens pauperculus*)	CRPR 1B.2	Damp coastal soil in redwood forest	**Present**. The species has been recorded in the program area in the Lower Pescadero Creek Watershed and suitable habitat is present in the San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Upper Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*)	CRPR 1B.1	Serpentine in grassland and oak woodland	**Present**. The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries watershed.
Marin checker lily (*Fritillaria lanceolata* var. *tristulis*)	CRPR 1B.1	Coastal grassland, bluffs and coastal scrub	**May be Present**. Suitable habitat is present in the program area for this species in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, and Arroyo Leon Watersheds.
Fragrant fritillary (*Fritillaria liliacea*)	CRPR 1B.2	Often serpentine in grassland, coastal scrub, oak woodland, montane hardwood	**Present**. The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, and Gazos Creek-Frontal Año Nuevo Bay watersheds and suitable habitat is present in the Arroyo Leon and San Francisquito Creek Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Toren's grimmia (*Grimmia torenii*)	CRPR 1B.3	Rocky in chaparral, oak woodland, montane hardwood conifer	**Present**. The species has been recorded in the program area in the Gazos Creek-Frontal Año Nuevo Bay Watershed and suitable habitat is present in the Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, and Butano Creek Watersheds.
Diablo helianthella (*Helianthella castanea*)	CRPR 1B.2	Montane hardwood, chaparral, oak woodland, coastal scrub, grassland	**Present**. The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries Watershed.
Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*)	CRPR 1B.2	Grassland	**Absent.** Congested-headed hayfield tarplant is presumed extirpated from San Mateo County.
Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*)	CRPR 1B.2	Coastal grassland, sandy areas in coastal scrub	**Present**. The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Water star-grass (*Heteranthera dubia*)	CRPR 2B.2	Alkaline freshwater wetlands	**Present**. Suitable habitat is present in the program area for this species in the San Francisco Bay Estuaries, Visitacion Valley-Frontal San Francisco Bay Estuaries, and Colma Creek-Frontal San Francisco Bay Estuaries Watersheds.
Kellogg's horkelia (*Horkelia cuneata* var. *sericea*)	CRPR 1B.1	Openings in closed cone coniferous forest, open in coastal chap, coastal grassland, coastal scrub	**Present**. The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean and Arroyo Leon Watersheds and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Point Reyes horkelia (*Horkelia marinensis*)	CRPR 1B.2	Sandy areas in coastal scrub or coastal grasslands	**May be Present**. Suitable habitat is present in the program area for this species in the Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Island rock lichen (*Hypogymnia schizidiata*)	CRPR 1B.3	On bark and wood of hardwoods and conifers in Closed-cone coniferous forest and chaparral.	**Present.** The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed.
Perennial goldfields (*Lasthenia californica* ssp. *macrantha*)	CRPR 1B.2	Coastal scrub on bluffs	**Present**. The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Legenere (*Legenere limosa*)	CRPR 1B.1	Vernal pools in grassland	**May be Present**. Suitable habitat is present in the program area for this species in the San Francisquito Creek Watershed.
Rose leptosiphon (*Leptosiphon rosaceus*)	CRPR 1B.1	Coastal scrub on bluffs	**Present**. The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Crystal Springs lessingia (*Lessingia arachnoidea*)	CRPR 1B.2	Serpentine in oak woodland, coastal scrub, grassland	**Present**. The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries Watersheds and suitable habitat is present in the Cordilleras Creek-Frontal San Francisco Bay Estuaries Watershed.
Coast lily (*Lilium maritimum*)	CRPR 1B.1	Montane hardwood, closed cone conifer forest, coastal grassland, coastal scrub, freshwater wetlands, redwood	**Absent.** Coast lily is presumed extirpated from San Mateo County.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Ornduff's meadowfoam (*Limnanthes douglasii* ssp. *ornduffii*)	CRPR 1B.1	Wet meadows in cropland	**Present**. The species has been recorded in the program area in the Denniston Creek-Frontal Pacific Ocean Watershed and suitable habitat is present in the San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Indian Valley bush-mallow (*Malacothamnus aboriginum*)	CRPR 1B.2	Rocky areas in chaparral, oak woodland	**May be Present**. Suitable habitat is present in the program area for this species in the Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, and Purisima Creek-Frontal Pacific Ocean Watersheds.
Arcuate bush-mallow (*Malacothamnus arcuatus*)	CRPR 1B.2	Chaparral, oak woodland	**Present**. The species has been recorded in the program area in the Cordilleras Creek-Frontal San Francisco Bay Estuaries and Upper Pescadero Creek Watersheds and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek, and Waddell Creek Watersheds.
Davidson's bush-mallow (*Malacothamnus davidsonii*)	CRPR 1B.2	Chaparral, oak woodland, coastal scrub, riparian woodland	**May be Present**. Suitable habitat is present in the program area for this species in the Colma Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries and San Francisquito Creek Watersheds.
Hall's bush-mallow (*Malacothamnus hallii*)	CRPR 1B.2	Chaparral, coastal scrub	**May be Present**. Suitable habitat is present in the program area for this species in the Colma Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries and San Francisquito Creek Watersheds.
Marsh microseris (*Microseris paludosa*)	CRPR 1B.2	Closed-cone pine, oak woodland, coastal scrub, grassland	**Present**. The species has been recorded in the program area in the Gazos Creek-Frontal Año Nuevo Bay Watershed and suitable habitat is present in the Butano Creek Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Woodland woollythreads (*Monolopia gracilens*)	CRPR 1B.2	Serpentine areas in montane hardwood openings, chaparral openings, oak woodland, redwood openings, grassland	**Present**. The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek and Purisima Creek-Frontal Pacific Ocean Watersheds and suitable habitat is present in the Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, La Honda Creek, San Gregorio Creek, Lower Pescadero Creek, Upper Pescadero Creek, Butano Creek and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Kellman's bristle moss (*Orthotrichum kellmanii*)	CRPR 1B.2	Sandstone or carbonate substrates in chaparral, oak woodland	**Present**. The species has been recorded in the program area in the Butano Creek and Gazos Creek-Frontal Año Nuevo Bay Watersheds and suitable habitat is present in the Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek and Upper Pescadero Creek Watersheds.
Monterey pine (*Pinus radiata*)	CRPR 1B.1	Closed cone pine, montane hardwood conifer, only known from Año Nuevo	**Present**. The species has been recorded in the program area in the Gazos Creek-Frontal Año Nuevo Bay Watershed. Only native stands of Monterey pine are considered special-status. In San Mateo County, native stands are limited to areas around Año Nuevo State Park.
White-flowered rein orchid (*Piperia candida*)	CRPR 1B.2	Sometimes on serpentine in montane hardwood conifer, redwood, montane hardwood	**Present**. Suitable habitat is present in the program area for this species in the San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay, and Waddell Creek Watersheds.
Choris' popcorn-flower (*Plagiobothrys chorisianus* var. *chorisianus*)	CRPR 1B.2	Moist areas in chaparral, coastal grassland, coastal scrub	**Present**. The species has been recorded in the program area in the Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Upper Pescadero Creek, Butano Creek, and Gazos Creek-Frontal Año Nuevo Bay Watersheds and suitable habitat is present in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, and Lower Pescadero Creek Watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Oregon polemonium (*Polemonium carneum*)	CRPR 2B.2	Openings in coastal scrub, coastal grassland, montane hardwood conifer	**Present**. The species has been recorded in the program area in the Arroyo Leon and San Mateo Creek-Frontal San Francisco Bay Watersheds and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Chaparral ragwort (*Senecio aphanactis*)	CRPR 2B.2	Alkaline soils in chaparral, cismontane woodland, coastal scrub	**Present.** The species has been recorded in the program area in the Cordilleras Creek-Frontal San Francisco Bay Estuaries Watershed and suitable habitat is present in the San Mateo Creek-Frontal San Francisco Bay Estuaries and Colma Creek-Frontal San Francisco Bay Estuaries Watersheds.
Scouler's catchfly (*Silene scouleri* ssp. *scouleri*)	CRPR 2B.2	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	**Present**. The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, and San Pedro Creek-Frontal Pacific Ocean, Lower Pescadero Creek Watersheds.
San Francisco campion (*Silene verecunda* ssp. *verecunda*)	CRPR 1B.2	Sandy areas in coastal scrub, grassland, chaparral	**Present**. The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, and Denniston Creek-Frontal Pacific Ocean Watersheds and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, Butano Creek and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
Santa Cruz microseris (*Stebbinsoseris decipiens*)	CRPR 1B.2	Open areas and sometimes serpentine in coastal scrub, closed cone pine, coastal grassland, montane hardwood	**Present**. The species has been recorded in the program area in the Gazos Creek-Frontal Año Nuevo Bay Watershed.
Slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*)	CRPR 2B.2	Freshwater wetlands, Riparian	**May be Present**. Suitable habitat is present in the program area for this species in the Gazos Creek-Frontal Año Nuevo Bay Watershed.
Santa Cruz clover (*Trifolium buckwestiorum*)	CRPR 1B.1	Coastal prairie, mixed evergreen forest	**Present.** The species has been recorded in the program area in the Upper Pescadero Creek Watershed.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Saline clover (*Trifolium hydrophilum*)	CRPR 1B.2	Vernal pools in grassland, bay margin	**May be Present**. Suitable habitat is present in the program area for this species in the San Francisco Bay Estuaries Watershed.
San Francisco owl's-clover (*Triphysaria floribunda*)	CRPR 1B.2	Often serpentine in coastal grassland, coastal scrub	**Present**. Suitable habitat is present in the program area for this species in the San Francisco Bay Estuaries, Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, and San Mateo Creek-Frontal San Francisco Bay Estuaries Watersheds.
Coastal triquetrella (*Triquetrella californica*)	CRPR 1B.2	Bluffs in coastal scrub	**Present**. The species has been recorded in the program area in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries and San Pedro Creek-Frontal Pacific Ocean Watersheds and suitable habitat is present in the Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, San Mateo Creek-Frontal San Francisco Bay Estuaries, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek and Gazos Creek-Frontal Año Nuevo Bay Watersheds.
CNPS-Listed Plant Species (CRPR 3 and 4)			
California androsace (*Androsace elongata* ssp. *acuta*)	CRPR 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, valley and foothill grassland	**May be Present**. Suitable habitat is present in the program area for this species in the Cordilleras Creek-Frontal San Francisco Bay Estuaries and San Francisquito Creek watersheds.
Coast rockcress (*Arabis blepharophylla*)	CRPR 4.3	Rocky substrates in broadleafed upland forest, coastal bluff scrub, coastal prairie and coastal scrub.	**Present.** The species has been recorded in the program area in the Colma Creek-Frontal San Francisco Bay Estuaries, San Mateo Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, Denniston Creek-Frontal Pacific Ocean and La Honda Creek watersheds.
Ocean bluff milk-vetch (*Astragalus nuttallii* var. *nuttallii*)	CRPR 4.2	Coastal bluff scrub and coastal dunes	**Present.** The species has been recorded in the program area in the Purisima Creek-Frontal Pacific Ocean and Denniston Creek-Frontal Pacific Ocean watersheds and suitable habitat is present in the San Pedro Creek-Frontal Pacific Ocean and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Brewer's calandrinia (*Calandrinia breweri*)	CRPR 4.2	Sandy or loamy, disturbed sites and burns in chaparral and coastal scrub.	**Present.** The species has been recorded in the program area in the Butano Creek, Upper Pescadero Creek, La Honda Creek, San Gregorio Creek, San Mateo Creek-Frontal San Francisco Bay Estuaries, and Cordilleras Creek-Frontal San Francisco Bay Estuaries watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Oakland star-tulip (*Calochortus umbellatus*)	CRPR 4.2	Often on serpentine substrates in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland.	**May be Present.** Suitable habitat is present in the program area for this species in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, and Colma Creek-Frontal San Francisco Bay Estuaries.
Pink star-tulip (*Calochortus uniflorus*)	CRPR 4.2	Coastal prairie, coastal scrub, meadows and seeps, North Coast coniferous forest.	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries. Suitable habitat is present in the Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek, Colma Creek-Frontal San Francisco Bay Estuaries, San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Arroyo Leon, La Honda Creek, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, Butano Creek, Gazos Creek-Frontal Año Nuevo Bay, and Waddell Creek watersheds.
Johnny-nip (*Castilleja ambigua* var. *ambigua*)	CRPR 4.2	Vernal pool margins in coastal bluff scrub, coastal prairie, coastal scrub, valley and foothill grassland.	**Present.** The species has been recorded in the program area in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Branching beach aster (*Corethrogyne leucophylla*)	CRPR 3.2	Closed-cone coniferous forest and coastal dunes.	**May be Present.** Suitable habitat is present in the program area for this species in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Clustered lady's-slipper (*Cypripedium fasciculatum*)	CRPR 4.2	Usually serpentine seeps and streambanks in lower montane coniferous forest, North Coast coniferous forest.	**Present.** The species has been recorded in the program area in the Purisima Creek-Frontal Pacific Ocean, San Mateo Creek-Frontal San Francisco Bay Estuaries, and Upper Pescadero Creek watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Mountain lady's-slipper (*Cypripedium montanum*)	CRPR 4.2	Broadleafed upland forest, cismontane woodland, lower montane coniferous forest, North Coast coniferous forest.	**Present.** The species has been recorded in the program area in the San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, and San Mateo Creek-Frontal San Francisco Bay Estuaries watersheds.
California bottle-brush grass (*Elymus californicus*)	CRPR 4.3	Broadleafed upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland.	**Present.** The species has been recorded in the program area in the Gazos Creek-Frontal Año Nuevo Bay, Lower Pescadero Creek, La Honda Creek, San Gregorio Creek, San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, San Mateo Creek-Frontal San Francisco Bay Estuaries, and Arroyo Leon watersheds.
Marsh horsetail (*Equisetum palustre*)	CRPR 3	Marshes and swamps.	**May be Present.** Suitable habitat is present in the program area for this species in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
San Francisco wallflower (*Erysimum franciscanum*)	CRPR 4.2	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland (often serpentinite or granitic, sometimes roadsides)	**May be Present.** Suitable habitat is present in the program area for this species in the San Pedro Creek-Frontal Pacific Ocean, Denniston Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Stinkbells (*Fritillaria agrestis*)	CRPR 4.2	Clay, sometimes serpentinite substrates in chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland.	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries and Gazos Creek-Frontal Año Nuevo Bay watersheds.
San Francisco gumplant (*Grindelia hirsutula* var. *maritima*)	CRPR 3.2	Sandy or serpentine substrates in coastal bluff scrub, coastal scrub, and valley and foothill grassland	**May be Present.** Suitable habitat is present in the program area for this species in the San Pedro Creek-Frontal Pacific Ocean and Denniston Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, and Gazos Creek-Frontal Año Nuevo Bay watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Vernal barley (*Hordeum intercedens*)	CRPR 3.2	Saline flats and depressions in coastal dunes, coastal scrub, valley and foothill grassland and in vernal pools.	**May be Present.** Suitable habitat is present in the program area for this species in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, Denniston Creek-Frontal Pacific Ocean, San Pedro Creek-Frontal Pacific Ocean, San Francisco Bay Estuaries San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Waddell Creek, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Harlequin lotus (*Hosackia gracilis*)	CRPR 4.2	In wetlands and roadsides within broadleafed upland forest, Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland.	**Present:** The species has been recorded in the program area in the Colma Creek-Frontal San Francisco Bay Estuaries, San Mateo Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, Denniston Creek-Frontal Pacific Ocean, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Butano Creek and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Coast iris (*Iris longipetala*)	CRPR 4.2	Mesic sites (meadows and seeps) in coastal prairie and lower montane coniferous forest.	**Present.** The species has been recorded in the program area in the Colma Creek-Frontal San Francisco Bay Estuaries, San Mateo Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, Denniston Creek-Frontal Pacific Ocean and La Honda Creek watersheds. Suitable habitat is present in the Purisima Creek-Frontal Pacific Ocean and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Bristly leptosiphon (*Leptosiphon acicularis*)	CRPR 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland.	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries watershed.
Serpentine leptosiphon (*Leptosiphon ambiguus*)	CRPR 4.2	Usually serpentine substrates in montane woodland, coastal scrub, valley and foothill grassland	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, and San Pedro Creek-Frontal Pacific Ocean watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Large-flowered leptosiphon (*Leptosiphon grandiflorus*)	CRPR 4.2	Usually sandy substrates in coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland.	**May be Present.** Suitable habitat is present in the program area for this species in the Visitacion Valley-Frontal San Francisco Bay Estuaries, Colma Creek-Frontal San Francisco Bay Estuaries, Denniston Creek-Frontal Pacific Ocean, San Pedro Creek-Frontal Pacific Ocean, San Francisco Bay Estuaries San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Waddell Creek, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Woolly-headed lessingia (*Lessingia hololeuca*)	CRPR 3	Clay or serpentine substrates in broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland.	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, La Honda Creek, and Upper Pescadero Creek watersheds.
San Mateo tree lupine (*Lupinus arboreus* var. *eximius*)	CRPR 3.2	Chaparral and coastal scrub.	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, Denniston Creek-Frontal Pacific Ocean, San Francisco Bay Estuaries, Purisima Creek-Frontal Pacific Ocean, and Gazos Creek-Frontal Año Nuevo Bay watersheds.
Elongate copper moss (*Mielichhoferia elongata*)	CRPR 4.3	Metamorphic rock, usually acidic, usually vernally mesic, and often on roadsides (sometimes carbonate) in broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, Lower montane coniferous forest, meadows and seeps, and subalpine coniferous forest.	**Present.** The species has been recorded in the program area in the Gazos Creek-Frontal Año Nuevo Bay watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*)	CRPR 4.2	Vernal pools and vernally mesic sites in broadleafed upland forest, chaparral, coastal prairie, and valley and foothill grassland.	**Present.** The species has been recorded in the program area in the San Mateo Creek-Frontal San Francisco Bay Estuaries, San Francisquito Creek watershed Butano Creek, Waddell Creek, Gazos Creek-Frontal Año Nuevo Bay watersheds and suitable habitat is present, Cordilleras Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, Colma Creek-Frontal San Francisco Bay Estuaries, Denniston Creek-Frontal Pacific Ocean, San Pedro Creek-Frontal Pacific Ocean, San Gregorio Creek, Purisima Creek-Frontal Pacific Ocean, Lower Pescadero Creek, Upper Pescadero Creek, and La Honda Creek watersheds.
Michael's rein orchid (*Piperia michaelii*)	CRPR 4.2	Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest.	**Present.** The species has been recorded in the program area in the San Francisquito Creek watershed and suitable habitat is present San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, Arroyo Leon, and La Honda Creek watershed.
Hickman's popcornflower (*Plagiobothrys chorisianus* var. *hickmanii*)	CRPR 4.2	Vernal pools, marshes and swamps in closed-cone coniferous forest, chaparral, and coastal scrub.	**Present.** The species has been recorded in the program area in the Butano Creek, Waddell Creek, and Gazos Creek-Frontal Año Nuevo Bay watersheds. Lower Pescadero Creek, San Gregorio Creek, and San Mateo Creek-Frontal San Francisco Bay Estuaries. Suitable habitat is present in the program area for this species in the San Francisquito Creek, Colma Creek-Frontal San Francisco Bay Estuaries, Denniston Creek-Frontal Pacific Ocean, San Pedro Creek-Frontal Pacific Ocean, Cordilleras Creek-Frontal San Francisco Bay Estuaries, and La Honda Creek watersheds.
Lobb's aquatic buttercup (*Ranunculus lobbii*)	CRPR 4.2	Vernal pools and other mesic sites in cismontane woodland, North Coast coniferous forest, and valley and foothill grassland.	**Present.** The species has been recorded in the program area in the La Honda Creek, San Francisquito Creek, Cordilleras Creek-Frontal San Francisco Bay Estuaries, and San Mateo Creek-Frontal San Francisco Bay Estuaries, and suitable habitat is present in the Colma Creek-Frontal San Francisco Bay Estuaries, and Arroyo Leon watersheds.

Common Name (Scientific Name)	Status1	Habitat Association	Potential to Occur in the Program Area
Hoffmann's sanicle (*Sanicula hoffmannii*)	CRPR 4.3	Often serpentine or clay soils in broadleafed upland forest, coastal bluff scrub, chaparral, cismontane woodland, coastal scrub, and lower montane coniferous forest.	**Present.** This species has been recorded in the program area in the Butano Creek watershed, and suitable habitat is present in the Waddell Creek, Gazos Creek-Frontal Año Nuevo Bay watersheds, Lower Pescadero Creek, Denniston Creek-Frontal Pacific Ocean, and San Pedro Creek-Frontal Pacific Ocean watersheds.
Marsh zigadenus (*Toxicoscordion fontanum*)	CRPR 4.2	Vernally mesic, often serpentine meadows, seeps, marshes, or swamps in chaparral, cismontane woodland, lower montane coniferous forest.	**Present.** The species has been recorded in the program area in the San Francisquito Creek watershed and suitable habitat is present in the San Mateo Creek-Frontal San Francisco Bay Estuaries, Cordilleras Creek-Frontal San Francisco Bay Estuaries, and Colma Creek-Frontal San Francisco Bay Estuaries watersheds.
Methuselah's beard lichen (*Usnea longissima*)	CRPR 4.2	Growing on tree branches; usually on old growth hardwoods and conifers in broadleafed upland forest and north Coast coniferous forest.	**May be Present.** Suitable habitat is present in the program area for this species in the Upper Pescadero Creek, La Honda Creek, Butano Creek, Waddell Creek, and Gazos Creek-Frontal Año Nuevo Bay watersheds.

Notes: [1]Status Codes:

Federal

FE Listed as endangered under the Endangered Species Act
FT Listed as threatened under the Endangered Species Act

State

SE Listed as endangered under the California Endangered Species Act
ST Listed as threatened under the California Endangered Species Act
SC Candidate for listing under the California Endangered Species Act
SR Listed as rare under the Native Plant Protection Act

CRPR = California Rare Plant Rank

1B Plants rare, threatened, or endangered in California and elsewhere
3 Plants about which information is needed-a review list
4 Plants of limited distribution-a watch list
.1 seriously endangered in California
.2 fairly endangered in California
.3 not very endangered in California

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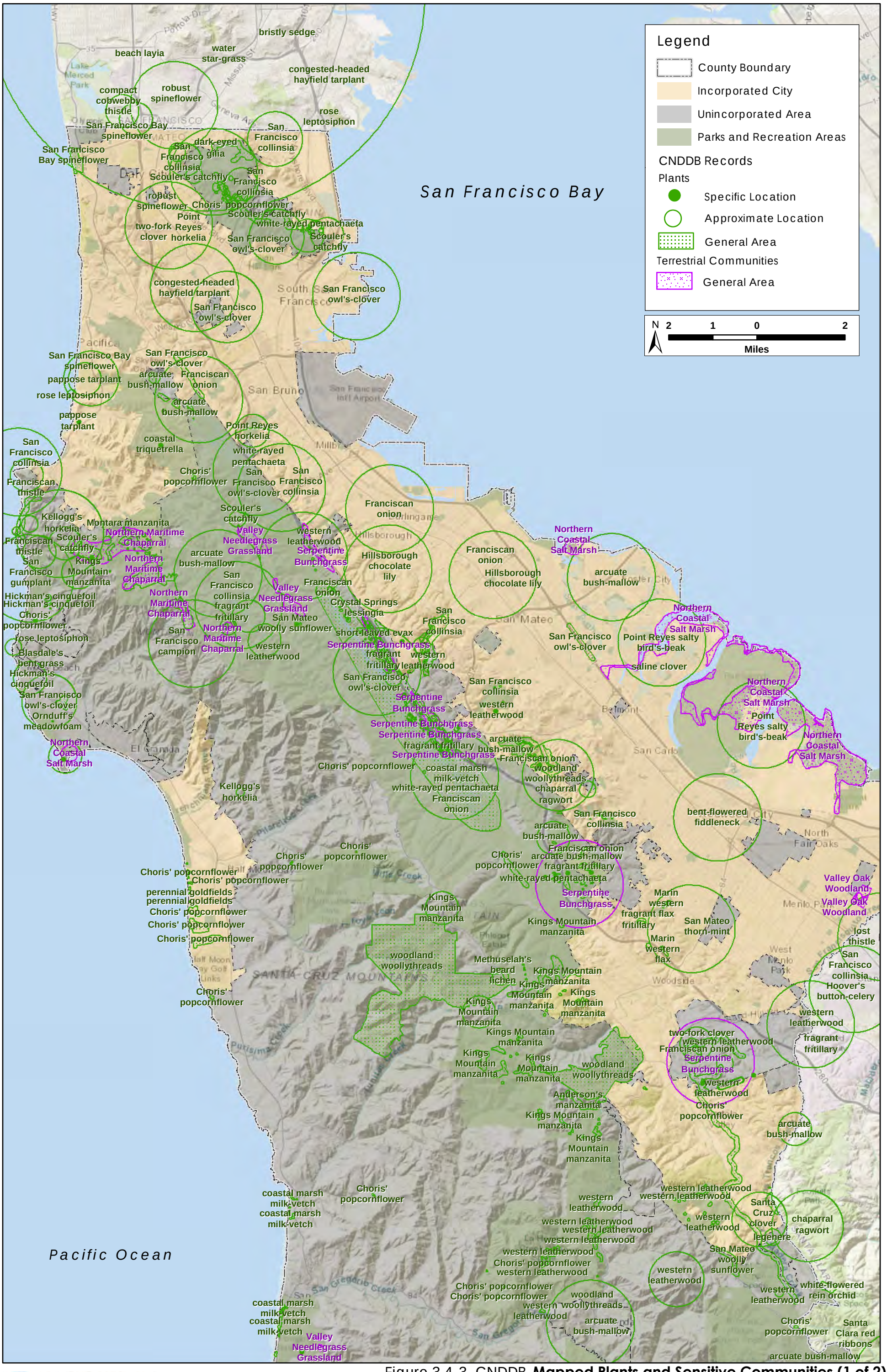

Figure 3.4-3. CNDDB-**Mapped Plants and Sensitive Communities (1 of 2)**

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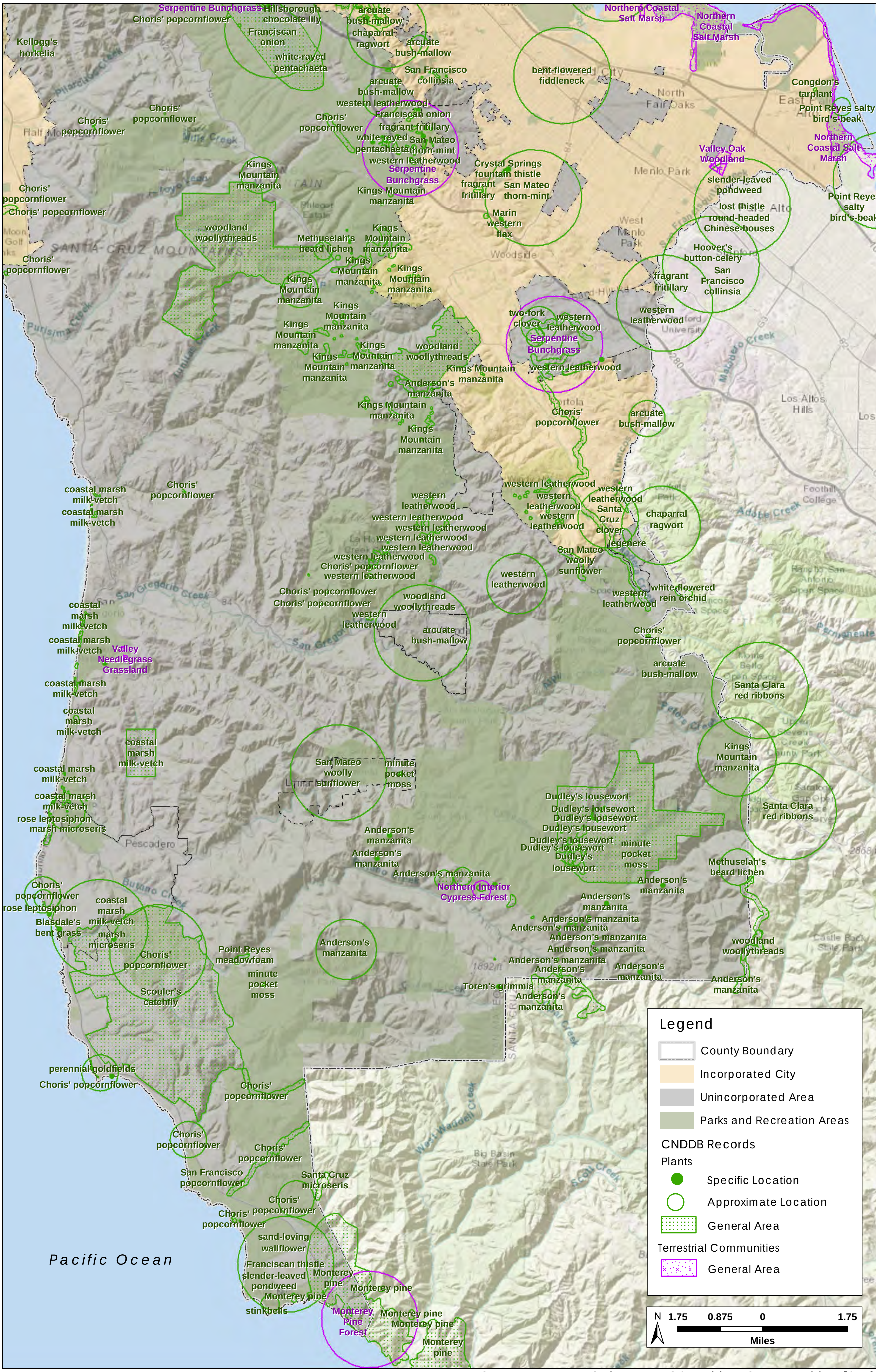

Figure 3.4-3. **CNDDB-Mapped Plants and Sensitive Communities (2 of 2)**
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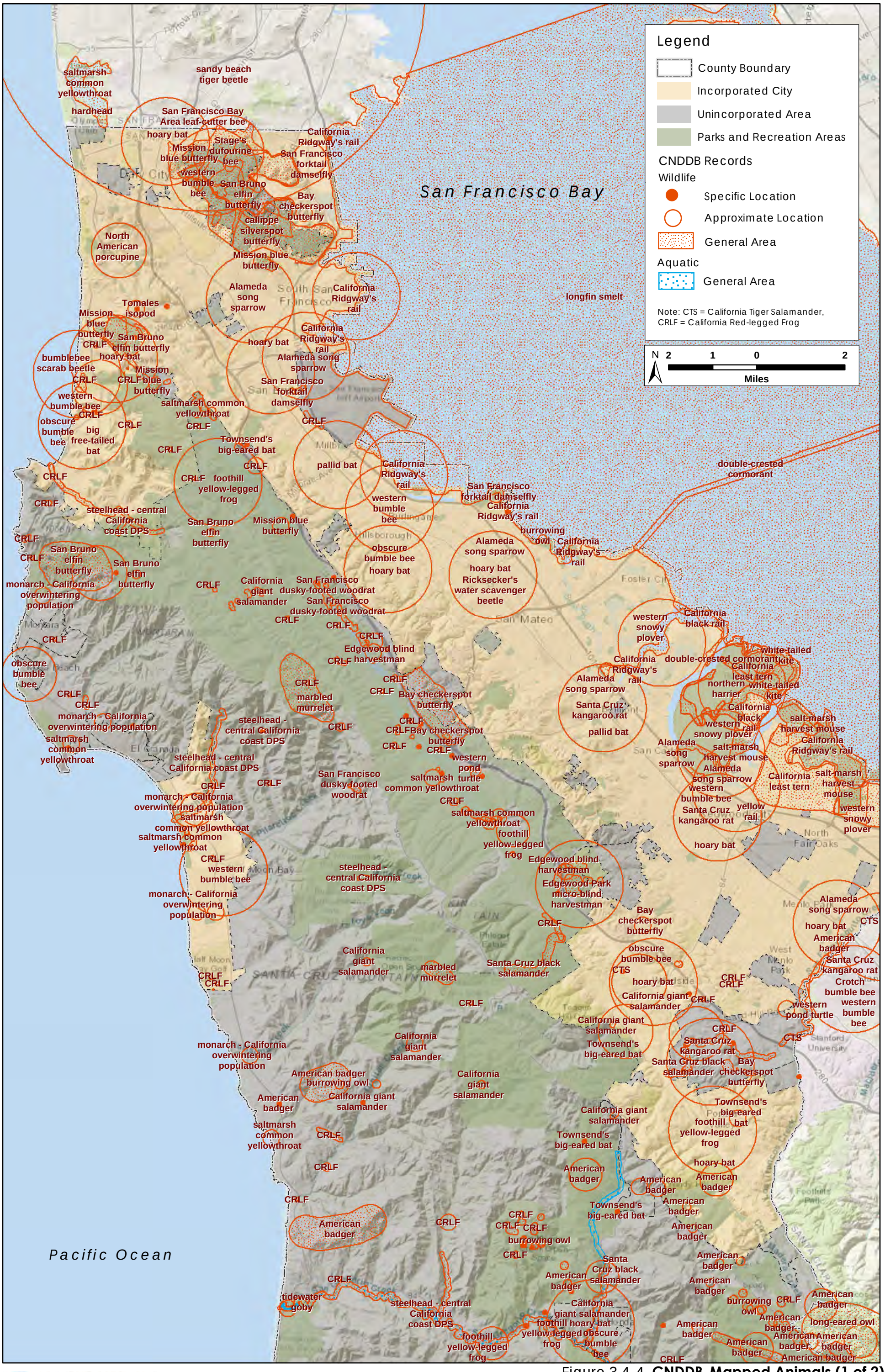

Figure 3.4-4. **CNDDB-Mapped Animals (1 of 2)**

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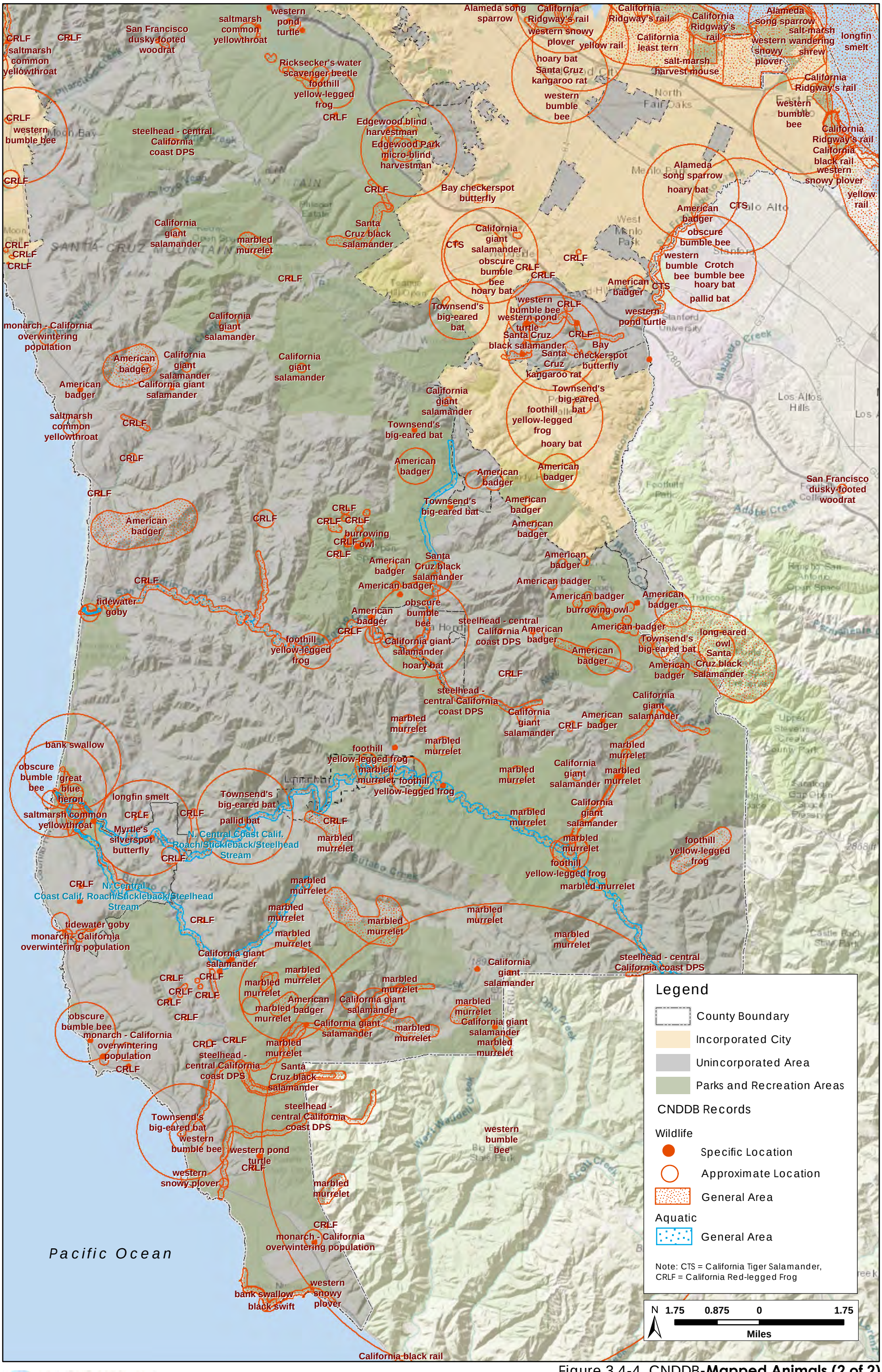

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Figure 3.4-4. CNDDB-**Mapped Animals (2 of 2)**
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Table 3.4-2. Special-status Animal Species with Potential to Occur in the Program Area

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
Federal or State Endangered, Threatened, and Candidate Animal Species			
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT	Native grasslands on serpentine soils. Larval host plants are *Plantago erecta a*nd *Castilleja* spp.	**Present.** Through much of the 1990s, this species was known to occur at two locations in San Mateo County (Jasper Ridge Biological Preserve and Edgewood Park, which is within the program area). However, it was last recorded at Jasper Ridge in 1997 and at Edgewood Park in 2002 (Weiss 2002). Reintroduction efforts at Edgewood Park, which began in 2007, has been moderately successful. Although almost 800 adults were spotted in 2014, numbers in subsequent years have declined with only 78 adults observed in 2016 (Creekside Science 2016). The species was also reintroduced to San Bruno Mountain in 2017 (Creekside Science 2017). Designated critical habitat includes four units in San Mateo County (i.e., Unit 1, San Bruno Mountain; Unit 2 Pulgas Ridge; Unit 3 Edgewood Park/Triangle; and Unit 4 Jasper Ridge).
Mission blue butterfly (*Icaricia icarioides missionensis*)	FE	Coastal chaparral and coastal grasslands. Larval host plant are *Lupinus* spp.	**Present.** Remaining populations of the Mission blue butterfly are found in only a few locations around the San Francisco Bay area, including the Skyline ridges and San Bruno Mountain in San Mateo County (USFWS 2020a).
San Bruno elfin butterfly (*Callophrys mossii bayensis*)	FE	Coastal mountains near San Francisco Bay in the fog-belt of steep, north-facing slopes. Larval food plant is *Sedum spathulifolium.*	**Present.** All known locations are restricted to San Mateo County, where several populations are known from San Bruno Mountain, Milagra Ridge, the San Francisco Peninsula Watershed, and Montara Mountain (USFWS 2020b).

Notes: [1]Status Codes:

Federal

- FE Listed as endangered under the Endangered Species Act
- FT Listed as threatened under the Endangered Species Act
- FC Candidate for listing under the Endangered Species Act

State

- SE Listed as endangered under the California Endangered Species Act
- ST Listed as threatened under the California Endangered Species Act
- SC Candidate for listing under the California Endangered Species Act
- CSSC California Species of Special Concern
- SP State fully protected

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
Callippe silverspot butterfly (*Speyeria callippe callippe*)	FE	Grasslands of the northern San Francisco Bay region. Larval host plant is *Viola pedunculata.*	**Present.** Callippe silverspot butterflies are restricted to populations at Cordelia Hills in Solano County and San Bruno Mountain in San Mateo County (USFWS 2020c).
Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*)	FE	Coastal dune and prairie habitat. Larval host plants are violets, typically *Viola adunca.*	**Absent.** Although the historical distribution of this species included San Mateo County, its current extant range is believed to be restricted to the region within or near the Point Reyes National Seashore (USFWS 2020d).
Monarch butterfly (*Danaus plexippus plexippus*)	FC	Overwinter along the Pacific coastline of California and move inland in the spring to reproduce. During the breeding season, require milkweed (*Asclepias* spp.) plants upon which to rear their larvae.	**Present.** In the program area, monarch butterflies occur primarily as migrating individuals in the fall and spring but also overwinter. The Xerces Society (2016) has records for 14 overwintering sites along the San Mateo coast. However, only three have been verified to be active since 2010 (Xerces Society 2016). Monarch butterflies also breed in the program area, albeit locally and in low numbers.
Green sturgeon (*Acipenser medirostris*)	FT, CSSC	Spawns in large river systems such as the Sacramento River; forages in nearshore oceanic waters, bays, and estuaries.	**Absent as Breeder.** Known to occur in the Bay, though it apparently occurs only as a rare, nonbreeding visitor to the South Bay. May occur in the program area in tidal waters along the Bay edge at San Francisco International Airport and Coyote Point Recreation Area, albeit infrequently and in low numbers, if at all. All tidally influenced areas of the Bay, up to the elevation of mean higher high water, have been designated as critical habitat for this species (NMFS 2009).
Central California Coast Coho salmon (*Oncorhynchus kisutch*)	FE, SE	Open ocean, estuaries, and rivers.	**Present.** Central California Coast Coho salmon have recently been recorded spawning in the southwestern portion of the program area in Pescadero Creek (Peninsula Open Space Trust [POST] 2018). However, no Coho have been recorded in Gazos Creek during annual monitoring since 2008 (Smith 2013 as cited in CDFW 2015). The species was historically collected from San Mateo Creek (Leidy 2007) and may have been present in the San Francisquito Creek watershed (Leidy et al. 2005). However, it has been extirpated from all San Mateo County streams flowing to the Bay (Leidy 2007). Designated critical habitat occurs in the program area and includes all accessible reaches of all rivers

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
			including estuarine areas and tributaries between Punta Gorda and the San Lorenzo River (inclusive) in California.
Central California Coast steelhead (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Present.** In the program area, steelhead are known to occur in Pilarcitos Creek, San Gregorio Creek, Pescadero Creek, San Francisquito Creek, San Mateo Creek, Denniston Creek, Frenchman's Creek, Arroyo Leon, Mills Creek, Apanolio Creek, Los Trancos Creek, Gazos Creek, San Pedro Creek, Purisima Creek, Lobitos Creek, Tunitas Creek, Dry Creek, El Corte de Madera, Bogess Creek, Harrington Creek, La Honda Creek, Langley Creek, Alpine Creek, Mindego Creek, Rogers Gulch, Pomponio Creek, Bradley Creek, Little Butano Creek, Butano Creek, Honsinger Creek, Weeks Creek, McCormick Creek, Tarwater Creek, Peters Creek, Evans Creek, Bear Creek, Lambert Creek, Slate Creek, Oil Creek, Little Boulder Creek, Waterman Creek, Gazos Creek, Old Womans Creek, Whitehouse Creek, Año Nuevo Creek, and Elliot Creek (Spence et al. 2008, CEMAR 2008) and could potentially occur in other coastal streams. Designated critical habitat includes all river reaches and estuarine areas accessible to listed steelhead in coastal river basins from the Russian River to Aptos Creek, California (inclusive), and the drainages of San Francisco and San Pablo Bays (NMFS 2000, 2005).
Longfin smelt (*Spirinchus thaleichthys*)	ST, FC	Spawns in fresh water in the upper end of the San Francisco Bay; occurs year-round in the South Bay.	**Absent as Breeder.** In the program area, smelt may be present in the tidal waters around San Francisco International Airport and Coyote Point Recreation Area (Bayside), but the species is not expected to spawn in the program area.
Tidewater goby (*Eucyclogobius newberryi*)	FE, CSSC	Brackish water habitats along coast, fairly still but not stagnant water and high oxygen levels.	**Present.** The species has been recorded in the lower mouths of creeks along the southern portion of the San Mateo County coast north to San Gregorio Creek (Coastside). However, an apparently natural gap in the species' distribution along the California coast occurs north of San Gregorio Creek to the San Francisco Bay (USFWS 2005). Critical habitat has been designated and four critical habitat units occur in the program area.

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
California red-legged frog (*Rana draytonii*)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation.	**Present.** Red-legged frogs may be present in suitable habitat throughout most of San Mateo County. Red-legged frog critical habitat units SNM-1 and SNM-2 are located in the program area.
Foothill yellow-legged frog (*Rana boylii*)	SE	Partially shaded shallow streams and riffles with a rocky substrate. Occurs in a variety of habitats in coast ranges.	**May be Present.** Suitable habitat for the foothill yellow-legged frog is present in the program area. However, there is only one recorded occurrence of the species in San Mateo County in recent history, in 1999 at Pescadero Creek County Park (CNDDB 2019). Species is scarce, if it occurs at all, in the program area.
California tiger salamander (*Ambystoma californiense*)	FT, ST	Vernal or temporary pools in annual grasslands or open woodlands.	**May be Present.** Southeastern San Mateo County represents the northernmost limit of the species' range on the San Francisco peninsula. The last recorded occurrence in San Mateo County was located in the Palo Alto, California U.S. Geological Survey 7.5-minute quadrangle just west of San Francisquito Creek in 2002 (CNDDB 2019).
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SP	Prefer densely vegetated freshwater habitats. May use upland burrows for aestivation.	**Present.** The San Francisco garter snake is restricted to the San Francisco peninsula from just north of the San Francisco–San Mateo County line south to approximately the San Mateo–Santa Cruz County line. West of the crest of the Santa Cruz Mountains, the San Francisco garter snake is found in limited areas along the coast. East of the crest, it is found from the City of South San Francisco and the San Francisco airport, south to Crystal Springs Reservoir, although urbanization limits this species' occurrence in the eastern portion of San Mateo County. An intergrade zone composed of hybrids between the San Francisco garter snake and red-sided garter snake (*Thamnophis sirtalis sirtalis*) occurs from Palo Alto north to the Pulgas region near Upper Crystal Springs Reservoir (Barry 1994).
Marbled murrelet (*Brachyramphus marmoratus*)	FT, SE (nesting)	Requires dense, mature forests of redwood (*Sequoia* spp.) and Douglas-fir (*Pseudotsuga menziesii*) for breeding.	**Present.** In San Mateo County, the marbled murrelet is restricted to old-growth redwood forests, where it breeds, and to coastal waters, where it forages (SAS 2001, Cornell Lab of Ornithology 2019). Four marbled murrelet critical habitat units are present in San Mateo County (CA-12, CA-13, CA-14a, and CA-14b).

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
Western snowy plover (*Charadrius nivosus nivosus*)	FT, CSSC	Sandy beaches on marine and estuarine shores and salt pannes in San Francisco Bay saline managed ponds.	**Present.** In the program area, the western snowy plover is restricted to broader coastal beaches (SAS 2001, Cornell Lab of Ornithology 2019). Two critical habitat units are present in the program area, CA 14 (Ravenswood) and CA-16 (Half Moon Bay) and suitable habitat may be present at Tunitas Creek Beach.
California least tern (*Sternula antillarum browni*)	FE, SE, SP	Nests along the coast on bare or sparsely vegetated, flat substrates. In San Francisco Bay, nests primarily on an old airport runway. Forages for fish in open waters.	**Absent.** The species does not nest in the program area and the program area does not provide high quality foraging habitat for the species.
California Ridgway's rail (*Rallus obsoletus obsoletus*)	FE, SE, SP	Salt marsh habitat dominated by pickleweed (*Salicornia* spp.) and cordgrass (*Spartina* spp.).	**Present.** Suitable breeding and foraging habitat are present along the Bay, and the species is resident in salt marsh habitat in San Mateo County, particularly where broader areas of well-developed tidal salt marsh are present (CNDDB 2019). However, within the program area, suitable marsh habitat is found only along the shoreline of the San Francisco International Airport, where the species was detected in 2012 (H. T. Harvey & Associates 2012). Even there, suitable habitat is very limited.
California black rail (*Laterallus jamaicensis coturniculus*)	ST, SP	Breeds in fresh, brackish, and tidal salt marsh.	**Absent as Breeder.** Occurs in the South Bay primarily as a scarce winter visitor. However, the species has recently been recorded during the breeding season in Triangle Marsh along Coyote Slough over 7 miles east of the planning area (Laurie Hall pers. com.), and along lower and mid-Alviso Slough, indicating that this species may nest in some areas in the South Bay. The species has been recorded in San Mateo County at the Ravenswood Open Space (Cornell Lab of Ornithology 2019), and suitable habitat for nonbreeding California black rails is present within tidal salt marsh throughout much of the Bayside portion of San Mateo County. However, within the program area, suitable nonbreeding habitat is present only within a small flood zone at Ravenswood Slough and along the shoreline of the San Francisco International Airport, and even there, suitable habitat is very limited. Thus,

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
			California black rails are expected to occur rarely, if at all, in the program area.
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Occurs mainly along seacoasts, rivers, and lakes; nests in tall trees or in cliffs, occasionally on electrical towers. Feeds mostly on fish.	**Present.** In the program area, the bald eagle occurs primarily as a migrant and winter visitor and is rare during the summer months (Cornell Lab of Ornithology 2019). However, a pair successfully nested at Crystal Springs Reservoir in 2013, 2014, and 2015 and there are rumors of possible nesting, by what was likely the same pair, nearby in subsequent years.
Bank swallow (*Riparia riparia*)	ST (nesting)	Colonial nester on vertical banks or cliffs with fine-textured soils near water.	**Present.** Bank swallows occur as rare migrants along the coast and South Bay, although they could occur anywhere in the program area. As breeders, they are very rare in the program area, with the only known extant breeding colony occurring at Point Año Nuevo (CNDDB 2019); however, suitable habitat may also be present at Tunitas Creek Beach. Because this species is only considered threatened when nesting, it would not be considered a special-status species if it occurs as a migrant.
Tricolored blackbird (*Agelaius tricolor)*	ST	Nests near fresh water in dense emergent vegetation.	**Present.** In the program area, the tricolored blackbird occurs primarily along the coastal lowlands and in the San Francisco Bay lowlands. It occurs less frequently along the ridgeline of the Santa Cruz Mountains. It is an uncommon to common migrant and wintering visitor and a very rare breeder (SAS 2001, Cornell Lab of Ornithology 2019).
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	FE, SE, SP	Salt marsh habitat dominated by common pickleweed.	**Present.** Numerous detections of this species have been recorded in salt marsh habitat along the Bay. However, suitable habitat in the program area is very limited. Tidal salt marsh along the Bay shoreline in program areas near the San Francisco International Airport is ostensibly suitable for this species, though it is very narrow and fragmented, and the species is not thought to occur along the San Mateo bayside north of the San Mateo Bridge. No Program activities are expected to occur in salt marsh south of the San Mateo Bridge where this species may be present.

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
California Species of Special Concern			
California giant salamander (*Dicamptodon ensatus*)	CSSC	Moist forests and riparian zones in or near clear, cold streams or seeps.	**Present.** Suitable habitat for the California giant salamander is present in the Maintenance program area, primarily on the Coastside, and the species is known to occur in Memorial and Pescadero County Parks (CNDDB 2019).
Santa Cruz black salamander (*Aneides niger)*	CSSC	Mixed deciduous and coniferous woodlands and coastal grasslands. Adults found under rocks, talus, and moist woody debris.	**Present.** Suitable habitat for the Santa Cruz black salamander in the program area is primarily restricted to the Santa Cruz Mountains and foothills (CNDDB 2019). The species has been recorded in the program area at Huddart County Park (CNDDB 2019).
Western pond turtle (*Actinemys marmorata*)	CSSC	Permanent or nearly permanent water in a variety of habitats.	**Present.** Creeks, lakes, ponds, and freshwater marshes in the program area provide suitable habitat for the western pond turtle, which has been documented in the program area at San Francisquito Creek and Crystal Springs Reservoir (CNDDB 2019).
Black skimmer (*Rynchops niger*)	CSSC (nesting)	Nests on abandoned levees and islands in saline managed ponds and marshes.	**Present.** In San Mateo County, the black skimmer occurs primarily in the Redwood Shores/Menlo Park area, where it is known to have nested in managed ponds. It also occurs as an occasional migrant on the coast in the program area (such as around Coyote Point Recreation Area), but is very rare there (SAS 2001, Cornell Lab of Ornithology 2019). Because this species is only considered a species of special concern when nesting, it would not be considered a special-status species if it occurs in the program area as a migrant.
Northern harrier *(Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	**Present.** In the program area, during the breeding season the northern harrier occurs primarily along the coast (in marshes and grasslands) and in tidal marshes of South San Francisco Bay (SAS 2001, Cornell Lab of Ornithology 2019). Because this species is only considered a species of special concern when nesting, it would not be considered a special-status species if it occurs in the program area as a migrant.
Short-eared owl (*Asio flammeus*)	CSSC (nesting)	Nests on ground in tall emergent vegetation or grasses, forages over a variety of open habitats.	**Absent as Breeder.** In the program area, the short-eared owl occurs primarily from October to March, with most records confined to coastal marshes, grasslands, and fallow fields and to

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
			tidal marshes of South San Francisco Bay (SAS 2001, Cornell Lab of Ornithology 2019).
Long-eared owl (*Asio otus*)	CSSC (nesting)	Riparian bottomlands with tall, dense willows and cottonwood stands (also dense live oak and California Bay along upland streams); forages primarily in adjacent open areas.	**Present.** The long-eared owl occurs throughout the program area in appropriate habitat, but it is relatively rare and very secretive (SAS 2001, Cornell Lab of Ornithology 2019).
Burrowing owl (*Athene cunicularia*)	CSSC	Open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels.	**Present.** In the program area, the burrowing owl occurs as a rare winter visitor to more extensive grasslands along the coast and elsewhere. A statewide survey conducted between 1991 and 1993 indicated that breeding owls had nearly been extirpated from San Mateo County where only one to two known breeding pairs remained (DeSante et al. 2007). Recent records in the program area are all of wintering birds or migrants (CNDDB 2019).
Vaux's swift *(Chaetura vauxi*)	CSSC (nesting)	Nests in snags in coastal coniferous forests or, occasionally, in chimneys; forages aerially.	**Present.** In the program area, the Vaux's swift breeds in mature redwood forests during the breeding season (SAS 2001). It could potentially breed elsewhere, as it occasionally nests in chimneys, which it has been known to do in adjacent Santa Clara County (Rottenborn 2007). This species can occur throughout the program area during spring and fall migration (Cornell Lab of Ornithology 2019). However, because it is only considered a species of special concern when nesting, it would not be considered a special-status species if it occurs in the program area as a migrant.
Black swift *(Cypseloides niger*)	CSSC (nesting)	Nest on cliffs and coastal bluffs; forage aerially for insects.	**Present.** In the program area, the black swift occurs primarily along the coast and coastal ranges, although it can occur anywhere (Cornell Lab of Ornithology 2019). It is a rare breeder in the program area; the only known breeding location is at Año Nuevo State Park (SAS 2001).
Olive-sided flycatcher (*Contopus cooperi*)	CSSC (nesting)	Breeds in mature forests with open canopies, along forest edges in more densely vegetated areas,	**Present.** The olive-sided flycatcher breeds in montane and coastal forests and woodlands in the program area, being absent from the highly developed South Bay (SAS 2001). During spring and fall

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
		in recently burned forest habitats, and in selectively harvested landscapes (Altman and Sallabanks 2000, Robertson and Hutto 2007).	migration, it can occur anywhere in the program area (Cornell Lab of Ornithology 2019). However, because this species is only considered a species of special concern when nesting, it would not be considered a special-status species if it occurs in the program area as a migrant.
Purple martin (*Progne subis*)	CSSC (nesting)	Nest in abandoned woodpecker holes.	**Present.** Purple martins occur in San Mateo County as rare migrants along the coast and very rare and local breeders along the ridgeline of the Santa Cruz Mountains (SAS 2001, Rana Creek Habitat Restoration 2002, Cornell Lab of Ornithology 2019).
Loggerhead shrike (*Lanius ludovicianus*)	CSSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	**Present.** Grassland, ruderal, and marsh communities throughout the program area provide suitable nesting and foraging habitat for this species. However, it occurs primarily as a migrant and wintering visitor along the coastal and San Francisco Bay lowlands, and is generally absent from the crest of the Santa Cruz Mountains. It is a rare breeder in the program area. The few known recent nesting records from San Mateo County are all from the San Francisco Bay lowlands, though outside the program area (SAS 2001, Cornell Lab of Ornithology 2019). Because this species is only considered a species of special concern when nesting, it would not be considered a special-status species if it occurs in the program area as a migrant.
Yellow warbler (*Setophaga petechia*)	CSSC (nesting)	Nests in riparian woodlands.	**Present.** Riparian woodlands in the program area provide suitable nesting and foraging habitat for this species, which occurs in suitable habitat throughout San Mateo County (Cornell Lab of Ornithology 2015). However, the species is a rare and local breeder in such riparian habitat, being particularly scarce along the coast.
San Francisco common yellowthroat (*Geothlypis trichas sinuosa*)	CSSC	Nests in herbaceous vegetation, usually in wetlands or moist floodplains.	**Present.** Taller salt, brackish, and freshwater marsh habitat, as well as willow riparian habitat and even dense weedy vegetation in mesic coastal habitats at scattered locations throughout much of the program area provide suitable breeding and foraging habitat for this species.

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
Alameda song sparrow (*Melospiza melodia pusillula*)	CSSC	Nests in salt marsh, primarily in marsh gumplant and cordgrass along channels.	**Present.** In San Mateo County, this species occurs only in salt marshes along San Francisco Bay (Chan and Spautz 2008).
Grasshopper sparrow (*Ammodramus savannarum*)	CSSC (nesting)	Breeds and forages in grasslands, meadows, fallow fields, and pastures.	**Present.** Breeding grasshopper sparrows occur in relatively low numbers in extensive grasslands throughout San Mateo County (SAS 2001, Cornell Lab of Ornithology 2019, Unitt 2008).
Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*)	CSSC	Nests in pickleweed dominant salt marsh and adjacent ruderal habitat.	**Present.** High marsh habitat in bayside and coastal lowlands, as well as more extensive grasslands in the Santa Cruz Mountains, provides suitable breeding and foraging habitat for this species.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub.	**Present.** Woodlands, scrub, and ruderal habitats throughout the program area provide suitable nesting and foraging habitat for this species.
Salt marsh wandering shrew (*Sorex vagrans halicoetes*)	CSSC	Medium-high marsh 6 to 8 feet above sea level with abundant driftwood and common pickleweed.	**May be Present.** This species is likely present in broader salt and brackish marshes along the Bay, although its distribution is poorly known. There is a low probability of occurrence in the program area owing to the fragmented nature of salt marsh habitat around San Francisco International Airport and Coyote Point Recreation Area.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and hollow trees.	**Present.** Occurs sporadically throughout open areas and along roads of the Pacific coastal regions and the Santa Cruz Mountains within the program area. This species is not expected to occur on the flat Bayside lands of the eastern portion of the program area but likely occurs occasionally at the edges of developed areas in the foothills immediately west of the low elevation bayside areas.
Townsend's big-eared bat (*Corynorhinus townsendii)*	CSSC	Roosts in caves and mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	**Present.** This species is a rare resident in the coastal region of the program area, potentially roosting in old mines, caves, very large cavities in redwood trees, and barns and abandoned buildings in the Santa Cruz Mountains. It has been extirpated from the flat Bayside lands of the eastern portion of the program area.
Western red bat (*Lasiurus blossevillii*)	CSSC	Roosts in foliage in forest or woodlands, especially in or near riparian habitat.	**Absent as Breeder.** Occurs as a migrant and winter resident, but does not breed in the program area. Small numbers may roost in

Common Name (Scientific Name)	Status[1]	Habitat Association	Potential to Occur in the Program Area
			foliage in trees virtually anywhere in the program area, but are expected to roost primarily in riparian areas.
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Present.** Badgers may occur in low numbers throughout open areas of the Pacific coastal regions and the Santa Cruz Mountains within the program area. This species is not expected to occur on the flat Bayside lands of the eastern portion of the program area.
State Fully Protected Species			
White-tailed kite (*Elanus leucurus*)	SP	Nests in tall shrubs and trees, forages in grasslands, marshes, and ruderal habitats.	**Present.** Marshes and grasslands within the program area provide suitable breeding and foraging habitat.
American peregrine falcon (*Falco peregrinus anatum*)	SP	Forages in many habitats; nests on cliffs and tall bridges and buildings.	**Present.** American peregrine falcons may forage in suitable habitat throughout the program area. Recently, the species has been documented nesting along the Devil's Slide Coastal Trail, and it is possible that it may nest on bridges and cliffs elsewhere in the program area.
Golden eagle (*Aquila chrysaetos*)	SP	Breeds on cliffs or in large trees (rarely on electrical towers), forages in open areas.	**Present.** In the program area, the golden eagle is an uncommon to rare permanent resident (Cornell Lab of Ornithology 2019). It occurs sparingly in grasslands throughout San Mateo County, primarily as a nonbreeder, although a few pairs nest there (SAS 2001).
Ringtail (*Bassariscus astutus*)	SP	Cavities in rock outcrops and talus slopes, as well as hollows in trees, logs, and snags that occur in riparian habitats and dense woodlands, usually in close proximity to water.	**May be Present.** Suitable habitat is present in portions of the program area with dense woodlands and/or rocky outcroppings, primarily in the less developed western portion of the program area.

Notes: *[1]Status Codes:*

Federal

- FE Listed as endangered under the Endangered Species Act
- FT Listed as threatened under the Endangered Species Act
- FC Candidate for listing under the Endangered Species Act

State

- SE Listed as endangered under the California Endangered Species Act
- ST Listed as threatened under the California Endangered Species Act
- SC Candidate for listing under the California Endangered Species Act
- CSSC California Species of Special Concern
- SP State fully protected

Forty-five special-status wildlife species are known or expected to occur within the habitats present in the proposed program area and could potentially breed or roost there. These are the Bay checkerspot butterfly (*Euphydryas editha bayensis*), Mission blue butterfly (*Icaricia icarioides missionensis*), San Bruno elfin butterfly (*Callophrys mossii bayensis*), callippe silverspot butterfly (*Speyeria callippe callippe*), monarch butterfly (*Danaus plexippus plexippus*), Central California Coast (CCC) coho salmon (*Oncorhynchus kisutch*), CCC steelhead (*Oncorhynchus mykiss*), tidewater goby (*Eucyclogobius newberryi*), California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), California tiger salamander (*Ambystoma californiense*), California giant salamander (*Dicamptodon ensatus*), Santa Cruz black salamander (*Aneides niger*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), western pond turtle (*Actinemys marmorata*), marbled murrelet (*Brachyramphus marmoratus*), western snowy plover (*Charadrius nivosus nivosus*), black skimmer (*Rynchops niger*), California Ridgway's rail (*Rallus obsoletus obsoletus*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), long-eared owl (*Asio otus*), burrowing owl (*Athene cunicularia*), Vaux's swift (*Chaetura vauxi*), black swift (*Cypseloides niger*) bank swallow (*Riparia riparia*), olive-sided flycatcher (*Contopus cooperi*), purple martin (*Progne subis*), loggerhead shrike (*Lanius ludovicianus*), yellow warbler (*Setophaga petechia*), San Francisco common yellowthroat (*Geothlypis trichas sinuosa*), tricolored blackbird (*Agelaius tricolor*), Alameda song sparrow (*Melospiza melodia pusillula*), grasshopper sparrow (*Ammodramus savannarum*), Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), salt marsh harvest mouse (*Reithrodontomys raviventris*), salt marsh wandering shrew (*Sorex vagrans halicoetes*), ringtail (*Bassariscus astutus*), pallid bat (*Antrozous pallidus*), American badger (*Taxidea taxus*), and Townsend's big-eared bat (*Corynorhinus townsendii*).

3.4.2 REGULATORY SETTING

Biological resources are regulated by the following federal, state, and local laws and ordinances.

Federal Laws, Regulations, and Policies

Clean Water Act

Areas meeting the regulatory definition of "waters of the United States" (jurisdictional waters) are subject to the jurisdiction of U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the 1972 Clean Water Act (Federal Water Pollution Control Act) (CWA) and Section 10 of the 1899 Rivers and Harbors Act (described below). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (e.g., intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, and natural ponds), all impoundments of waters otherwise defined as "waters of the United States," tributaries of waters otherwise defined as "waters of the United States," the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to "waters of the United States" (33 Code of Federal Regulations [CFR], Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers *Wetlands Delineation Manual (*Environmental Laboratory 1987).

Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds

used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

Construction activities within jurisdictional waters are regulated by USACE. The placement of fill into such waters must comply with permit requirements of USACE. No USACE permit would be effective in the absence of state water quality certification under CWA Section 401. The State Water Resources Control Board (SWRCB) is the state agency, together with the Regional Water Quality Control Boards (RWQCBs), charged with implementing water quality certification in California.

Any placement of dredged or fill material within areas defined as waters of the United States (i.e., wetlands and other waters), including waterways such as Butano Creek and Pescadero Creek, would require a Section 404 fill discharge permit from the USACE and a Section 401 Water Quality Certification from the San Francisco Bay RWQCB.

Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act (1899) (33 U.S.C. Section 403) regulates the construction of structures, placement of fill, and introduction of other potential obstructions to navigation in navigable waters. Under Section 10 of the Rivers and Harbors Act, the building of wharves, piers, jetties, and other structures is prohibited without Congressional approval, and excavation or fill within navigable or tidal waters requires the approval of the Chief of Engineers.

USACE has the authority to issue permits for the discharge of refuse into, or affecting, navigable waters under section 13 of the 1899 Act (33 U.S.C. Section 407; 30 Stat. 1152). The act was modified by title IV of P.L. 92–500, October 18, 1972; the Federal Water Pollution Control Act Amendments of 1972 (33 U.S.C. Sections 1341–1345; 86 Stat. 877), as amended, established the NPDES permits. As mentioned above, Section 404 of the CWA authorizes the USACE to issue permits to regulate the discharge of dredged or fill material into waters of the U.S. If a Program activity also proposes to discharge dredged or fill material and/or introduce other potential obstructions in navigable waters of the U.S., a Letter of Permission authorizing these impacts must be obtained from the USACE under Section 10 of the Rivers and Harbors Act.

Federal Endangered Species Act

The ESA protects listed wildlife species from harm or "take," which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in death or injury of a listed animal species. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under the ESA only if they occur on federal lands or if the project requires a federal action, such as a CWA Section 404 fill permit from USACE.

USFWS has jurisdiction over federally listed threatened and endangered wildlife species under the ESA, while NMFS has jurisdiction over federally listed threatened and endangered marine and anadromous fish.

Based on a review of recent ecological studies of other projects in the vicinity; aerial photos and topographic maps; and other relevant scientific literature, technical databases, and resource agency reports, the following federally listed wildlife species occur, or potentially occur, in the program area: Bay checkerspot butterfly, Mission blue butterfly, San Bruno elfin butterfly, callippe silverspot butterfly, green sturgeon, CCC coho, CCC steelhead, tidewater goby, California red-legged frog, California tiger salamander, San Francisco garter snake, marbled murrelet, western snowy plover, California Ridgway's rail, and salt marsh harvest mouse. In addition, two federal candidates for listing, the longfin smelt and monarch butterfly, may occur in the program area. If take of a federally listed animal species would occur, incidental take approval would be required through either Section 7 or Section 10 consultation with the USFWS or NMFS, as applicable.

In addition, the following federally listed plant species occur, or potentially occur, in the program area: San Mateo thorn-mint (*Acanthomintha duttonii*), robust spineflower (*Chorizanthe robusta* var. *robusta*), Crystal Springs fountain thistle (*Cirsium fontinale* var. *fontinale*), San Mateo woolly sunflower (*Eriophyllum latilobum*), Butano Ridge cypress (*Hesperocyparis abramsiana* var. *butanoensis*), Marin western flax (*Hesperolinon congestum*), San Francisco lessingia (*Lessingia germanorum*), white-rayed pentachaeta (*Pentachaeta bellidiflora*), and Hickman's cinquefoil (*Potentilla hickmanii*). If any federally listed plant species would be affected by program activities requiring a Section 404 or Section 10 permit (see above), Section 7 consultation with the USFWS would be required. However, the County would not need incidental take approval for impacts on federally listed plant occurring on its own land.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

The Pacific Fisheries Management Council (PFMC) has designated EFH for the following three FMPs in the program area: Pacific Coast Groundfish, Coastal Pelagic Species, and Pacific Coast Salmon. Thus, if the proposed program would result in impacts on EFH, consultation with NMFS would be required. Such consultation would occur during the Section 7 or 10 consultation process (see "Federal Endangered Species Act" above).

Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA; 16 U.S. Code (USC) Section 703, Supp. I, 1989) prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The trustee agency that addresses issues related to the MBTA is USFWS. Migratory birds protected under this law include all native birds and certain game birds (e.g., turkeys and pheasants), though most non-native birds are excluded from MBTA protection (USFWS 2005b). This act encompasses whole birds, parts of birds, and bird nests and eggs. The MBTA protects active nests from

destruction and all nests of species protected by the MBTA, whether active or not, cannot be possessed. An active nest under the MBTA, as described by the U.S. Department of the Interior in its April 16, 2003 Migratory Bird Permit Memorandum, is one having eggs or young. Nest starts, prior to egg laying, are not protected from destruction.

All native bird species occurring in the program area are protected by the MBTA. Program activities will include measures to avoid take of birds protected by the MBTA.

Federal Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (16 USC Section 668 *et seq.*) makes it unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, or their parts, products, nests, or eggs. Take includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbance. Exceptions may be granted by USFWS for scientific or exhibition use, or for traditional and cultural use by Native Americans; however, no permits may be issued for import, export, or commercial activities involving eagles.

In the program area, the bald eagle occurs primarily as a migrant and winter visitor; however, a pair has recently nested at Crystal Springs Reservoir. The golden eagle is an uncommon to rare permanent resident, occurring primarily as a nonbreeder, although a few pairs nest in the program area. Program activities will avoid take, as defined by the Bald and Golden Eagle Protection Act, of eagles.

State Laws, Regulations, and Policies

Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the state. Their authority comes from the CWA and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the state as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that *shallow w*aters of the state include headwaters, wetlands, and riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs to impact.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California's jurisdiction

to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the state require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not, for example for riparian habitats which are buffers to waters of the state. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Any activities within the proposed program area that affect waters of the United States or waters of the state would require Section 401 Water Quality Certification and/or Waste Discharge Requirements from the RWQCB. Most wetland and open water features in the proposed program area are considered both waters of the United States and waters of the State. It is possible that some features, such as ditches, that are not considered waters of the United States may be subject to the jurisdiction of the San Francisco Bay RWQCB as waters of the state.

California Endangered Species Act

The CESA (Fish and Game Code of California, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with the CESA, CDFW has jurisdiction over state-listed species. CDFW regulates activities that may result in "take" of individuals listed under the Act (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

Based on a review of recent ecological studies of other projects in the vicinity; aerial photos and topographic maps; and other relevant scientific literature, technical databases, and resource agency reports, 10 state-listed wildlife species occur, or potentially occur, in the program area: the CCC coho, longfin smelt, California tiger salamander, foothill yellow-legged frog, marbled murrelet, California Ridgway's rail, California black rail, bald eagle, bank swallow, and salt marsh harvest mouse.

Thirteen state listed plant species occur, or potentially occur in the program area: San Mateo thorn-mint, San Bruno Mountain manzanita (*Arctostaphylos imbricata*), Pacific manzanita (*Arctostaphylos pacifica*), Crystal Springs fountain thistle, San Mateo woolly sunflower, Butano Ridge cypress, Marin western flax, San Francisco lessingia, Point Reyes meadowfoam (*Limnanthes douglasii* ssp. *sulphurea*), Dudley's lousewort (*Pedicularis dudleyi*), white-rayed pentachaeta, San Francisco popcorn-flower (*Plagiobothrys diffusus*), and Hickman's cinquefoil. In addition, coast yellow leptosiphon (*Leptosiphon croceus*), a state candidate for listing, is present in the program area. If program activities would result in take of a state listed species, an incidental take permit would be required through Section 2081 consultation with the CDFW.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) and State CEQA Guidelines provide guidance in evaluating impacts of projects to biological resources and determining which

impacts would be significant. CEQA defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under State CEQA Guidelines Section 15065, a project's effects on biotic resources are deemed significant where the project would:

- 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 plant or animal.

In addition to the Section 15065 criteria that trigger mandatory findings of significance, Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

- 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 CDFW and/or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on federally protected wetlands as defined by CWA Section 404;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Section 15380(b) of State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in the ESA and the CESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either USFWS or CDFW or species that are locally or regionally rare.

CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists." Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not

have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review in accordance with State CEQA Guidelines Section 15380(b).

CNPS, a non-governmental conservation organization, has developed ranked lists of plant species of concern in California. Vascular plants included on these lists are defined as follows:

- CRPR 1A: Plants considered extinct
- CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2: Plants rare, threatened, or endangered in California but more common elsewhere
- CRPR 3: Plants about which more information is needed - review list
- CRPR 4: Plants of limited distribution - watch list

The CRPR listings are further described by the following threat code extensions:

- .1—seriously endangered in California
- .2—fairly endangered in California
- .3—not very endangered in California

Although CNPS is not a regulatory agency and plants on the CRPR lists have no formal regulatory protection, plants appearing on CRPR lists are, in general, considered to meet the State CEQA Guidelines Section 15380 criteria and adverse effects on these species may be considered substantial. All impacts on biological resources are considered during the CEQA review of the proposed program in the context of this draft environmental impact report (DEIR).

California Fish and Game Code

The California Fish and Game Code includes regulations governing the use of, or impacts on, many of the state's fish, wildlife, and sensitive habitats. CDFW exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of sections 1601–1603 of the Fish and Game Code. The Fish and Game Code requires a Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or water body and for the removal of riparian vegetation.

Certain sections of the Fish and Game Code describe regulations pertaining to certain animal species. For example, Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by CDFW. Raptors (i.e., eagles, falcons, hawks, and owls) and their nests are specifically protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Non-game mammals are protected by Fish and Game Code Section 4150, and other sections of the code protect other taxa.

Any work within channels with a clear bed and banks, including creeks, drainage channels, and sloughs within the program area, would require a Streambed Alteration Agreement from CDFW in accordance with Section 1602 of the California Fish and Game Code. All native bird species that occur in the proposed program area are protected by the state Fish and Game Code. Projects may be required to take measures to avoid impacts on nesting birds under California Fish and Game Code Sections 3503, 3513, and 3800. Native mammals and other species in the program area are also protected by the code.

McAteer-Petris Act

The McAteer-Petris Act was enacted in 1965 and established the Bay Conservation and Development Commission (BCDC). At that time, BCDC was a temporary state agency tasked with preparing a plan for the long-term use of the Bay. In 1969, the McAteer-Petris Act was amended to make BCDC a permanent agency and to incorporate the policies of the San Francisco Bay Plan into state law. BCDC has permit authority over shoreline areas subject to tidal action up to the mean high tide line. This includes sloughs, tidelands, submerged lands, and marshlands lying between the mean high tide and 5 feet above mean sea level for areas with Bay frontage, and the shoreline band or 100 feet landward from the Bay shoreline. BCDC regulates filling, dredging, and changes in use in the Bay. The Bay Plan provides policy direction for BCDC's permit authority regarding placement of fill, extraction of materials, determining substantial changes in land use, water, or structures within its jurisdiction, protection of the Bay habitat and shoreline, and maximizing public access to the Bay.

BCDC is primarily concerned about the placement of new "fill" (generally defined as any material in or over the water surface, including pilings or structures placed on pilings) in the Bay. BCDC also regulates new development within 100 feet of the shoreline to ensure that maximum feasible public access to and along the Bay is provided. Program activities that take place within 100 feet of the Bay shoreline fall under BCDC's jurisdiction. BCDC's jurisdiction applies to the easternmost portions of San Mateo County along the Bay shoreline including Coyote Point Park, which is managed by the County Parks Department. Prior to conducting these activities and, depending on the type of activities planned, the County would apply for either a regionwide permit or an administrative permit. Regionwide permits are appropriate for routine maintenance work whereas administrative permits are issued for activities that qualify as minor repairs or improvements.

California Coastal Act and San Mateo County's Local Coastal Program

The California Coastal Act of 1976 requires new development (e.g., buildings, roads, pipe, and utility lines) that occur within the Coastal Zone to obtain a Coastal Development Permit from either the Coastal Commission or the local government. While the California Coastal Commission is the primary agency that issues these permits, once a local agency has a Local Coastal Program that has been certified by the Commission, that local agency takes over the responsibility for issuing Coastal Development Permits. In 1980, the San Mateo County Board of Supervisors and the California Coastal Commission approved the San Mateo County's Local Coastal Program (LCP). Development must comply with the policies in the LCP. In 1981, the County's Planning and Building Development assumed responsibility for implementing the State Coastal Act in the unincorporated area of San Mateo County, including issuance of Coastal Development Permits.

All development planned in the Coastal Zone requires either issuance of a Coastal Development Permit or a Coastal Development Permit Exemption. Thus, under the Program,

maintenance activities that are planned within the Coastal Zone must obtain either a Coastal Development Permit or an exemption from these permit requirements.

Specific policies of the Coastal Act that are relevant to protection of biological resources include the following:

Section 30231. Biological productivity; water quality. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30233. Diking, filling or dredging; continued movement of sediment and nutrients.

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following: (1) new or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities; (2) maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launch ramps; (3) in open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structure pilings for public recreational piers that provide public access and recreational opportunities; (4) incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines; (5) mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas; (6) restoration purposes; (7) nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for these purposes to appropriate beaches or into suitable longshore current systems.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where the

improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients that would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for these purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Section 30240. Environmentally sensitive habitat areas; adjacent developments.

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Public Resources Code, Section 21083.4-Oak Woodland Conservation

California Public Resources Code (CPRC), Section 21083.4 requires that a county determine whether a project within its jurisdiction may result in conversion of oak woodlands that would have a significant effect on the environment.

Oak woodlands are present in the program area. However, tree removal under the Program would be limited, occurring primarily to eliminate public safety hazards along or near County-maintained facilities and to provide access to County facilities (e.g., roads and trails); improve visibility to inspect County facilities, protect infrastructure, and maintain the designed hydraulic capacity of flood control facilities; and manage fuel load and fire hazards (e.g., selective tree thinning). Thus, the proposed program would not result in the conversion of oak woodlands as defined under CPRC Section 21083.4.

Local Laws, Regulations, and Policies

Applicable local plans, policies, regulations and ordinances are presented below.

San Mateo County Heritage Tree Ordinance

According to the Heritage Tree Ordinance of San Mateo County (Ordinance No. 2427), a permit is required for the removal, destruction, or trimming of any Heritage Tree on public or private property, with Heritage Trees defined as: (a) Class 1 trees designated by the Board of Supervisors and (b) Class 2 - any one of 16 designated species of trees of specified diameter at breast height (dbh) (28-inch dbh bigleaf maple [*Acer macrophyllum];* 48-inch dbh madrone [*Arbutus menziesii];* 20-inch dbh golden chinquapin [*Chrysolepis chrysophylla];* all Santa Cruz cypress [*Cupressus abramziana];* 12-inch dbh Oregon ash [*Fraxinus latifolia];* 48-inch dbh tan

oak [*Lithocarpus densiflorus];* 48-inch dbh coast live oak (*Quercus agrifolia];* 40-inch dbh canyon live oak [*Quercus chrysolepis];* all Oregon white oak [*Quercus garryana];* 32-inch dbh black oak [*Quercus kelloggii];* 40-inch dbh interior live oak [*Quercus wislizenii];* 48-inch dbh valley oak [*Quercus lobata];* 30-inch dbh blue oak [*Quercus douglasii];* 48-inch dbh California bay [*Umbellularia californica];* 30-inch dbh California nutmeg [*Torreya californica];* or 72-inch dbh coast redwood [*Sequoia sempervirens]*), healthy and generally free from disease.

Removal or trimming of heritage trees would require a permit from the County.

San Mateo County Significant Tree Ordinance

According to the Significant Tree Ordinance of San Mateo County (Part Three of Division VIII of the Municipal Code), a permit is required for the removal or destruction of any Significant Tree within Design Review Districts or Scenic Corridors. A Significant Tree is any tree over 38 inches in circumference (12-inch dbh) measured at 4-1/2 ft above the ground or immediately below the lowest branch. In zoning areas for residential hillside/design review districts (RH/DR) the definition of a significant tree is any tree over 19 inches in circumference (6-inch dbh). In the RH/DR zone, permits are required for trimming indigenous trees (native to San Mateo County) as well as cutting trees. This ordinance is not the same as the Heritage Tree Ordinance, and is listed separately in the General Plan for San Mateo County (1986). Removal or trimming of ordinance-sized trees would require a permit from the County. Note that the County is currently preparing updates to the Significant and Heritage Tree Removal regulations to improve management of individual trees and tree canopy in the County, and to improve the tree removal and trimming permit process in a manner that is consistent with the County's General Plan (County of San Mateo 2019a). Interim regulations regarding Significant and Heritage trees went into effect on November 18, 2016 (County of San Mateo 2019b).

San Bruno Mountain Habitat Conservation Plan

The San Bruno Mountain Habitat Conservation Plan (HCP) and the federal ESA Section 10(a) permit were adopted in November 1982. The 30-year permit was renewed in 2013. The HCP serves as the implementation plan for managing and monitoring activities focused on protecting approximately 1,290 acres of land for the mission blue, callippe silverspot, and San Bruno elfin butterfly populations in the City of San Bruno, City of Brisbane, Daly City, South San Francisco, and San Mateo County and provides limited take coverage for these species. The Parks Department prepares and submits an annual report to the USFWS that describes the status of covered species, adult butterfly monitoring results, and vegetation management activities carried out to support habitat improvements that benefit these three special-status species. Routine maintenance activities that occur within the San Bruno Mountain HCP area are not covered by the HCP and therefore are addressed herein.

City of Burlingame Urban Reforestation and Tree Protection Ordinance

A portion of the Coyote Point Recreation Area is within the city limits of Burlingame. Per the City of Burlingame Municipal Code Section 11.06, no protected tree shall be removed from any parcel without a permit except as provided in Section 11.06.040. A "protected tree" is defined as (1) any tree with a circumference of 48 inches or more when measured 54 inches above natural grade; or (2) a tree or stand of trees so designated by the city council based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) a stand of trees in which the director

has determined each tree is dependent upon the others for survival. The following conditions shall be observed during construction or development of property (1) protected trees are to be protected by a fence which is to be maintained at all times; (2) protected trees that have been damaged or destroyed by construction shall be replaced or the city shall be reimbursed, as provided in Section 11.06.090; (3) chemicals or other construction materials shall not be stored within the drip line of protected trees; (4) drains shall be provided as required by the director whenever soil fill is placed around protected trees; and (5) signs, wires or similar devices shall not be attached to protected trees. (Ord. 1057 Section 1, (1975); Ord. 1470 Section 1, (1992); Ord. 1598 Section 1, (1998)).

City of San Mateo Heritage Tree Ordinance

A portion of the Coyote Point Recreation Area is within the city limits of San Mateo. Per the San Mateo Municipal Code Chapter 13.52, Heritage Trees, permits from the City's Director of Parks and Recreation are required for the removal of any trees that meet the definition of a heritage tree, defined as:

- Any bay, buckeye (*Aesculus* spp.), oak (*Quercus* spp.), cedar (*Cedrus* spp.) or redwood (*Sequoia* spp.) tree that has a diameter of 10 inches or more measured at 48 inches above natural grade;
- Any tree or stand of trees designated by resolution of the City Council to be of special historical value or of significant community benefit;
- A stand of trees, the nature of which makes each dependent on the others for survival; and
- Any other tree with a trunk diameter of 16 inches or more, measured at 48 inches above natural grade.

A permit from the Director of Parks and Recreation or their designee is required to remove, or cause to be removed, as well as prune any heritage tree from any property in the city. Construction work associated with any development project performed within a radius measured from the trunk center equal to ten times the diameter of the tree trunk measured at 4 feet above grade requires the preparation and submittal of a Tree Protection Plan for review and approval by the City Arborist prior to receiving a permit for a development project. Prior to the commencement of any development project, a chain link fence must be installed at the natural drip line of any protected tree which will be affected by the construction and shall prohibit the storage of any construction materials, equipment or other materials inside the fence.

Redwood City Tree Preservation Ordinance

A portion of Edgewood County Park and Preserve is within the city limits of Redwood City. Per the Redwood City Tree Preservation ordinance (Chapter 35 of the Redwood City Municipal Code), the Redwood City Park and Recreation Commission (Commission) may declare any tree, regardless of size, to be a heritage tree if the tree is healthy and has adapted well to the climatic conditions of the area, if the tree is visible from a public right-of-way and if the Commission finds that at least one of the following conditions exist: (a) the tree has historical significance, (b) the tree is indigenous to the area, or (c) the tree is one of a group of trees and that each tree is dependent on the other tree for survival. A permit from the Parks and Recreation Director is required to cut, move, or remove or cause to be cut, moved or removed any tree.

Town of Woodside Tree Ordinance

A portion of Huddart County Park is within the Town of Woodside. Per the Town of Woodside Municipal Code Section153.173, no person is allowed to destroy any tree without a obtaining a permit. In addition, Section153.176 states that significant trees are to be protected during site development and construction. Significant trees are defined (Section153.005) by their circumference or diameter based on growth rates. Slow-growing trees are defined as alder (*Alnus rhombifolia*), big leaf maple, blue oak, buckeye, Fremont cottonwood (*Populus fremontii*), madrone (*Arbutus menziesii*), and tan bark oak (*Lithocarpus densiflorus*). Slow-growing species are significant if the trunk is larger than 7.6 inches dbh, measured at 4 feet. Fast-growing species are defined as black oak (*Quercus kelloggii*), California bay laurel, coast live oak, coast redwood, Douglas fir (*Pseudotsuga menziesii*), valley oak, and western sycamore (*Platanus racemosa*). Fast-growing species larger than 9.5 inches dbh are significant trees. All other species larger than 11.5 inches dbh are considered significant trees. Protection of significant trees includes both precautions during site development and construction and measures to limit adverse environmental effects. Protection during development and construction include at a minimum the installation of a fence around the drip line, restricted construction activity within the dripline as defined by the permit and supervised by a certified arborist, and the posting of appropriate signage on the fence. Measures to limit adverse environmental effects include erosion control and soil and water retention. The town Planning Director may also require additional protective measures based on site conditions.

City of Millbrae Tree Protection and Urban Forestry Program Ordinance

A portion of Junipero Serra County Park is within the City of Millbrae. Per the City of Millbrae Municipal Code 8.60, a "street tree" includes any woody perennial plant located in any street, including a parking strip, having a single main axis or stem commonly achieving a minimum of 10 feet in height and capable of shaping and pruning to develop a branch-free trunk at least nine feet in height. (Ord. 598, Section 2; 1976 Code Section 8-12.04). Unless authorized by permit, no person or property owner shall plant, prune, remove, alter or undertake any other work on a street tree.

City of San Bruno Heritage Tree Ordinance

A portion of Junipero Serra County Park is within the City of San Bruno. Per the Heritage Tree Ordinance for The City of San Bruno (Chapter 8.25 of The City of San Bruno Municipal Code) a permit is required for the removal or pruning of any Heritage Tree on public or private property, with Heritage Trees defined as: (a) any native bay, buckeye, oak (*Quercus* spp.), redwood, or pine (*Pinus radiata*) tree that has a diameter of 6 inches or more measured at 54 inches above natural grade; (b) any tree or stand of trees designated by resolution of the city council to be of special historical value or of significant community benefit; (c) a stand of trees, the nature of which makes each dependent on the others for survival; or (d) any other tree with a trunk diameter of ten inches or more, measured at 54 inches above natural grade. Removal or pruning of heritage trees requires a permit from the director of public works or designee.

City of Half Moon Bay

A portion of Mirada Surf West County Park is within the limits of the City of Half Moon Bay. Per the City Half Moon Bay Heritage Tree ordinance (Section 7.40 of the Municipal Code), a permit is required for removal or significant alteration of a heritage tree. A "heritage tree" is

defined as (1) a tree located on public or private property, exclusive of eucalyptus, with a trunk diameter of 12 inches or circumference of approximately 38 inches measured at 48 inches above ground level; (2) a tree or stand of trees so designated by resolution of the City Council based on its finding of special historical, environmental or aesthetic value; or (3) any street tree located in the public right of way along the entire length of Main Street.

City of Pacifica Heritage Tree Ordinance

Sanchez Adobe Park and a portion of San Pedro Valley Park are within the limits of the City of Pacifica. Per the City of Pacifica Heritage Tree ordinance (Section 4 Chapter 12 of the Municipal Code), a heritage tree is any tree within the City of Pacifica, exclusive of eucalyptus, which has a trunk with a circumference of 50 inches (approximately 16 inches in diameter) or more, measured at 24 inches above the natural grade; or a tree or grove of trees, including eucalyptus, designated by resolution of the Council to be of special historical, environmental, or aesthetic value. Permits are required to cut down, destroy, remove, or move a heritage tree, or engage in new construction within the dripline of a heritage tree.

Town of Colma

A portion of San Bruno Mountain State and County Park is within the limits of the Town of Colma. Per the Town of Colma Tree Cutting and Removal ordinance (Section 5.06 of the Municipal Code), it is unlawful for any person to remove or alter any tree on private property in the City without a permit. As defined by the ordinance, a "tree" is any live woody plant having a single perennial stem of 12 inches or more in diameter or multi-stemmed perennial plant having an aggregate diameter of 40 inches or more measured 4 feet about the natural grade. A "tree" also includes any woody plant that has been placed by the City, or required by permit of the City, that has not yet obtained the stated size.

City of Daly City

A portion of San Bruno Mountain State and County Park is within the limits of the City of Daly City. Per the City of Daly City ordinance 12.40.120, it is unlawful for any person, firm or corporation to cut down, remove or destroy any tree growing upon any parkway, easement, right-of-ways, or other publicly owned area without first securing a permit to do so from the director of public works. A "tree" includes any woody perennial plant having a single main axis or stem commonly achieving 15 feet in height.

City of South San Francisco Tree Preservation Ordinance

A portion of San Bruno Mountain State and County Park is within the limits of the City of South San Francisco. City of South San Francisco Municipal Code 13.30 prohibits the removal or pruning of protected trees without a permit. Protected trees are defined as follows:

1. Any upright, single-trunked tree of a species not considered to be a heritage tree as defined in subsection (3) below or a tree listed in subsection (2) below, with a circumference of 48 inches or more when measured 54 inches above natural grade; or
2. Any upright, single-trunked tree of the following species: blue gum (*Eucalyptus globulus),* black acacia (*Acacia melanoxylon),* myoporum (*Myoporum lactum),* sweetgum (*Liquidambar styraciflua),* glossy privet (*Lingustrum lucidum),* or

Lombardy poplar (*Populus nigra)* with a circumference of 75 inches or more when measured 54 inches above natural grade; or

3. Any upright, single-trunked tree considered to be a heritage tree species, with a circumference of 30 inches or more when measured at 54 inches above natural grade. A heritage tree means any of the following: California, oak, cedar (*Cedrus* spp.), California buckeye, Catalina ironwood (*Lyonothamnus asplenifolium),* strawberry tree (*Arbutus* spp.), mayten (*Maytenus boaria),* or little gem dwarf southern magnolia (*Magnolia grandiflora "*Little Gem"); or
4. A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or
5. A stand of trees in which the director has determined each tree is dependent upon the others for survival.

Project activities that involve removal or pruning of protected trees as defined by the Ordinance would require a permit from the City of South San Francisco.

City of Brisbane

A portion of San Bruno Mountain State and County Park is within the limits of the City of Brisbane. Per the City of Brisbane municipal code section 12.12, a tree removal permit is required for removal, or severe trimming (50% of the foliage crown or 30% reduction in height) for the following categories of trees:

- any tree which has a trunk measuring 30 inches or greater in circumference, at a height of 24 inches above natural grade;
- any tree designated as protected by resolution of the City Council;
- Any tree, regardless of size, that was required as part of the granting of a permit, license or other approval by the City;
- any tree, regardless of size, that was required by the City as a replacement tree for an unlawfully removed tree; or
- any tree, regardless of size, planted or maintained by the City.

City of Menlo Park

Flood County Park is within the limits of the City of Menlo Park. Per the City of Menlo Park municipal code section 13.24.030, it is unlawful to remove any heritage tree or prune more than one-fourth of the branches or roots within a twelve-month period without obtaining a permit. The City defines heritage trees as the following:

- Any tree having a trunk with a circumference of 47.1 inches (diameter of 15 inches) or more measured at 54 inches above natural grade.
- Any oak tree native to California, with a circumference of 31.4 inches (diameter of 10 inches) or more measured at 54 inches above natural grade.

- Any tree or group of trees specifically designated by the City Council for protection because of its historical significance, special character or community benefit.

- Any tree with more than one trunk measured at the point where the trunks divide, with a circumference of 47.1 inches (diameter of 15 inches) or more, with the exception of trees that are under 12 feet in height, which are exempt from the ordinance.

An exception to this ordinance stated in municipal code section 13.24.030 includes the case of an emergency when a tree is imminently hazardous or dangerous to life or property. In such cases, the tree may be removed by order of the City's police chief, fire chief, director of public works or their respective designees.

3.4.3 IMPACT ANALYSIS

Methodology

The primary adverse effects on biological resources of the proposed program would occur during implementation of maintenance activities and the period immediately following such activities. Potential impacts are expected to include adverse effects on wetland, stream, and upland habitats; impacts on associated plant communities and habitats of plant and animal species; and the potential degradation of water quality caused by releases of sediment or placement of fill or other construction materials.

Potential impacts on biological resources as a result of the proposed program were first evaluated to qualitatively describe how program activities could impact biological resources and whether impacts would be temporary (i.e., occurring during program maintenance activities and the period immediately following these activities) or ongoing and permanent. After the initial impact screening, impacts were then evaluated considering the application of BMPs as appropriate for maintenance activities conducted under the proposed program (Tables 2-3 through 2-5 in Chapter 2, *Project Description*). For impacts that would remain potentially significant even with the implementation of BMPs, feasible mitigation measures were identified, and the significance of the impacts was re-evaluated to determine if mitigation measures would reduce impacts to a less-than-significant level.

Biological resources would be affected not only by specific proposed program activities but also, in a few cases, by BMPs. The net effect of these BMPs would be beneficial. However, in a few cases, adverse effects may occur during implementation of these measures. For example, in implementing BMP BIO-3, the relocation of California red-legged frogs from work areas may be necessary to avoid mortality of those individuals, but this may cause stress on these individuals during relocation. Thus, the effects of the avoidance and minimization measures were also analyzed where appropriate.

Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and the County's environmental checklist, it was determined that the proposed program would result in a significant impact on biological resources if it would:

- 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 CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW, USFWS, or NMFS;
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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;
- Conflict with local policies or ordinances protecting biological resources, or conflict with the provisions of an adopted HCP or Natural Community Conservation Plan (NCCP);
- Be located inside or within 200 feet of a marine or wildlife reserve; or
- Result in loss of oak woodlands or other non-timber woodlands.

Environmental Impacts

As described in Section 2.4, *Maintenance Activities,* the majority of near-term maintenance activities involve vegetation management, repair or replacement of deteriorating culverts, bank stabilization, sediment removal, bridge maintenance, and trail maintenance. Tables B-1 and B-2 in the Maintenance Manual (Appendix A) and the sites shown in Figures B-1 through B-7 in the Manual (Appendix A) identify anticipated routine maintenance sites. While the proposed program covers routine maintenance activities countywide, the sites and maintenance projects identified in Tables B-1 and B-2 provide a good basis to understand future maintenance activities that are expected to occur within the proposed program area.

The following section describes the potential effects on biological resources that may result from creek bank stabilization; culvert, storm drainage, channel, and bridge maintenance; vegetation management; road and trail maintenance; and marina maintenance activities.

Impact BIO-1: Potential Adverse Effects on Special-Status Plant or Animal Species (*Less than Significant with mitigation*)

BIO-1A: State and/or Federally-Listed Special-Status Plants (Less than Significant with Mitigation)

The following 14 state and/or federally listed (listed) or candidate plant species are either known to occur or have potential to occur in the program area:

- San Mateo thorn-mint
- San Bruno Mountain manzanita
- Pacific manzanita
- Crystal Springs fountain thistle

- San Mateo woolly sunflower
- Butano Ridge cypress
- Marin western flax
- San Francisco lessingia
- Coast yellow leptosiphon
- Point Reyes meadowfoam
- Dudley's lousewort
- White-rayed pentachaeta
- San Francisco popcorn-flower
- Hickman's cinquefoil

Five of these species—San Mateo thorn-mint, Crystal Springs fountain thistle, San Mateo wooly sunflower, Marin western flax, and white-rayed pentachaeta—are strict serpentine endemics which are found in one of the four main areas of serpentine habitats in San Mateo County. These areas are Edgewood Park, The Triangle, Crystal Springs Reservoir, and Pulgas Ridge (McCarten 1993). Thus, only maintenance activities in these locations have potential to adversely affect these serpentine-associated listed plants.

All other listed species have highly restricted ranges or are only known from a single location in San Mateo County. Butano Ridge cypress is endemic to San Mateo County and is known only from Butano Ridge within Pescadero Creek County Park; Hickman's cinquefoil is known only from a single location near a county road outside the town of Montara; San Francisco lessingia is known only from one location near Hillside Park in Daly City near the base of San Bruno Mountain; San Bruno Mountain manzanita and Pacific manzanita are restricted to San Bruno Mountain County Park; coast yellow leptosiphon is known from a single location on Vallemar Bluff at the northern edge of the Fitzgerald Marine Reserve; and Point Reyes meadowfoam is known in San Mateo County from a single location found along a county road just outside of Butano State Park. Dudley's lousewort is known from slightly more locations, but still limited to knowns locations in Pescadero Creek Park, Portola Redwood State Park, and Pescadero Marsh and State Beach. Because San Francisco popcorn flower is known from a single extant population located outside of the program area (i.e., in a coastal prairie on private property across Highway 1 from Año Nuevo State Park) no program impacts on this species are anticipated.

Due to the limited ranges of these species, only maintenance activities in the locations specified above are likely to adversely affect these listed plants. In addition, as indicated in Tables B-1 and B-2 in the Maintenance Manual (Appendix A), certain maintenance activities with the greatest degree of ground disturbance, such as bank stabilization and bridge replacements, are not projected in these locations. Therefore, there is a very low probability that these listed species would be impacted by program activities. However, other program activities could potentially occur in these locations or in nearby locations where there is suitable habitat for these species but where surveys have not been conducted. More detailed discussions of the impacts of potential Program activities on listed plants are grouped below by the category of maintenance activity (i.e., creek bank stabilization; culvert, storm drainage,

channel, and bridge maintenance; vegetation management; road and trail maintenance; and marina maintenance).

Bank Stabilization. Bank stabilization activities may impact listed plants through temporary loss and degradation of suitable habitat due to the alteration of hydrology from soil compaction; the introduction of non-native species (e.g., seeds introduced to the activity area as a result of contaminated machinery, equipment, or clothing), which can threaten native plant species through competition for resources and the physical or chemical alteration of the habitat; and the introduction and spread of pathogens such as *Phytophthora.* Bank stabilization activities may also result in a permanent loss of habitat due to hard armoring of banks; however, biotechnical or earthen bank repairs would be the preferred option if feasible.

Individual plants and populations may be lost due to mechanical or physical removal of vegetation in the work site (including staging and access areas), and damage to listed plants may occur as a result of crushing by equipment; trampling by personnel; and compaction of soil, which could result in damage to plant roots. These activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, wilting, or uprooting plants. Further, maintenance activities (including bank stabilization) often include the refueling of equipment on location. Minor fuel and oil spills may occur during refueling, with a risk of larger releases. Without rapid containment and clean up, these materials may kill or impair the health of special-status plants.

In cases where bank stabilization activities have the potential to prevent even more disastrous impacts on a population than the percentage of the population directly impacted, the net effect of the stabilization activity would be beneficial. For example, a catastrophic bank failure could result in the destruction of an entire population. Further, implementation of a number of BMPs that are routine for all program activities would avoid and minimize impacts on these species. Such BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 6, 7, 9, 10, and 19. In addition, implementation of BMP-24 would minimize the potential impacts of pathogens such as *Phytophthora,* and BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of these species.

BMP BIO-16 would be implemented specifically to avoid and minimize impacts on listed plants. Prior to any Program activities within suitable habitat for any of the species identified above, a qualified biologist would assess habitat suitability for the potential occurrence of special-status plant species within the work area. If determined to be warranted (i.e., if a special-status plant species could potentially occur within the work area, and that species is sufficiently rare that impacts of the activity on the species could be significant), a qualified botanist would conduct appropriately timed surveys for the focal plant species. If a listed species is observed in or near the project site, the population size and occupied area of listed plant populations identified during the field survey and with potential to be impacted would be estimated. In addition, the population would be photographed and flagged to maximize avoidance, as well as to estimate the percentage of the population affected. If feasible, the project would be redesigned or modified to avoid direct and indirect impacts on listed plant species.

If impacts are unavoidable, and if more than 5% of a population would be impacted, then the County will not initiate work in the vicinity of the plant(s) and will consult with the appropriate regulatory agencies before such work is initiated. If impacts on listed plants are unavoidable and less than 5% of a population would be impacted, during any ground-disturbing activities the County will preserve the seedbank within the portion of the impact area where special-status plants occur by removing and retaining the topsoil prior to conducting maintenance activities. Following completion of the maintenance activity, the County will monitor the impact area for two years. Any non-native invasive plant species occurring within this area during the monitoring period will be removed under the supervision of a qualified biologist.

In addition, special-status plants to be avoided would be protected from disturbance by installing environmentally sensitive area fencing. Protective fencing would be installed under the direction of a qualified biologist as necessary to protect the plant and its habitat; where feasible, the environmentally sensitive area fencing would be installed at least 50 feet from the edge of the population. The location of the fencing would be shown on any associated design drawings and included in any associated specifications or permit/BMP memos. For non-ground disturbing vegetation management activities conducted using only hand-held equipment, the non-disturbance buffer may be reduced to a minimum of 3 feet and flagging of the population may be used in place of environmentally sensitive fencing. Vegetation management activities in sensitive plant areas would be conducted under the guidance of a qualified biologist. These activities will be timed following the blooming periods of potentially occurring listed species.

All Program activities involving the combustion of fossil fuels may result in the emission of nitrogen compounds. Nitrogen in air pollution is eventually deposited on the ground. On serpentine soils, which are naturally nitrogen-deficient, endemic serpentine plant species are adapted to low-nitrogen conditions. An increase in nitrogen deposition on serpentine grasslands has been reported to favor the establishment and growth of non-native annual grasses and forbs by enriching nitrogen content within the soils, thus fertilizing the soils and enhancing conditions for non-native species that otherwise could not tolerate the low nitrogen conditions (Weiss 1999). The native endemics do not fare well under intense plant-plant competition, and thus in the absence of appropriately timed grazing, the long-term effect of nitrogen deposition may be the invasion of serpentine grasslands by non-natives, at the expense of natives. Program activities would result in air pollutant emissions from on-road and off-road vehicle use, including increases in nitrogen (NOx) emissions. Thus, impacts associated with Program activities include the deposition of atmospheric nitrogen-containing compounds on serpentine grasslands within the program area. However, bank stabilization activities are of very short duration and would result in very limited NOx emissions. The effects of vehicular activities associated with the Program on serpentine endemic plant species are expected to be negligible in the context of all the nitrogen deposition resulting from other sources, both within and outside the program area.

The extent of long-term effects on habitat for the listed plant species resulting from bank stabilization activities is unknown, because all bank stabilization activities cannot be projected and because the magnitude of the effect of stabilization depends on the type of repair method used. However, the extent of bank stabilization work that is expected to occur in habitat for these species would be very low, judging from activities that are anticipated in the proposed program's first 5 to 10 years. Furthermore, implementation

of BMPs would result in the avoidance and minimization of impacts on these species; such BMPs would include not only BMP BIO-16 for special-status plants, but also erosion control BMPs and BMP BIO-1 (environmental awareness training). As a result, no long-term adverse effects on habitat for listed special-status plant species are expected to occur due to bank stabilization activities where such activities would impact habitat occupied by less than 5% of a population. However, due to the highly restricted distribution of these species, if bank stabilization activities were to impact habitat occupied by greater than 5% of a population, the impact would be considered a long-term adverse effect on the habitat of that species.

Culvert, Storm Drainage, Channel, Bridge, and Roadside Ditches and Green Infrastructure (GI) *Maintenance.* Similar to the impacts described for bank stabilization activities above, culvert, storm drainage, channel, bridge, roadside ditch, and GI repair and maintenance activities may impact listed plant species through temporary loss and degradation of suitable habitat due to the alteration of hydrology through soil compaction and the introduction of non-native species. Individual plants and populations may be lost due to mechanical or physical removal of vegetation at the work site, and damage to listed plants may occur as a result of crushing by equipment, trampling by personnel, compaction of soil, and minor fuel and oil spills.

However, for maintenance of culverts and storm drain inlet and outlet cleaning, surface disturbance is typically limited to less than 5 linear feet from the culvert inlet and outlet. Further, although sediment removal activities could result in the removal of vegetation growing within a channel, channels where sediment removal is required are typically colonized by ruderal wetland vegetation such as cattails (*Typha* spp.) and flat-sedges (*Cyperus* spp.), and as such do not represent suitable habitat for listed plant species. The one federally-listed plant species that is known to occur in stream channels, Crystal Springs fountain thistle, is not known to occur in locations that are likely to be subject to proposed program activities. Thus, with implementation of BMPs as described under bank stabilization above, and due to the very localized and limited distribution of suitable habitat for listed plant species, culvert, storm drainage, channel, bridge, roadside ditch, and GI repair and maintenance activities impacts on these species would be minimal, if they occur at all.

Vegetation Management and Road and Trail Maintenance. Vegetation management and road and trail maintenance activities may result in the alteration of habitat (including the introduction of non-native species), the introduction and spread of pathogens such as *Phytophthora*, and/or direct damage and mortality of listed plant species as a result of mechanical or physical removal of vegetation or off target herbicide contact via drift. In addition, the creation of temporary access routes and staging areas may result in direct impacts on listed plant species due to mechanical or physical removal of vegetation; trampling by personnel and equipment; compaction of soil caused by movement of heavy equipment or soil disturbance; removal of propagules for colonization of other areas; and exposure to toxic chemicals (e.g., petroleum products). In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact special-status plants.

However, implementation of BMPs as described under bank stabilization above, as well as BMP BIO-23 for burn piles, will allow for impacts to special-status plants to be avoided (in most cases) or minimized; for example, occurrences detected during appropriately

timed surveys can be flagged and avoided during mowing and other vegetation management and road/trail maintenance activities. With implementation of BMPs, and due to the very localized and limited distribution of suitable habitat for listed plant species, vegetation management and road and trail maintenance impacts on these species would be minimal, if they occur at all.

Marina Maintenance. No suitable habitat for listed plant species is present where marina maintenance activities would occur. Thus, such activities would not result in impacts on listed plants.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on listed plant species. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-16: Avoid Special-Status Plant Species
- BMP BIO-17: Sudden Oak Death Controls
- BMP BIO-18: Invasive Plant Controls
- BMP BIO-23: Burn Piles
- BMP BIO-24: Pathogen Control
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-19: Dust Management Controls

Conclusion

Implementation of BMPs, and BMP BIO-16 in particular, would avoid or minimize impacts on listed plant species by identifying program activities that might occur near populations of special-status plant species, identifying occurrences of these plants near proposed work areas, identifying measures to avoid those populations where feasible, and/or implementing measures to minimize impacts (e.g., preserving the seedbank).

In addition some, vegetation management activities, particularly those aimed at fuel reduction, grazing for thatch management in grasslands, and invasive plant control, would have a potentially beneficial impact on listed special-status plant populations that are present or that have a seed bank present and that are threatened by factors such as competition from non-native invasive species, dense thatch, shrub and/or tree fuel loads.

Nevertheless, even with implementation of BMPs, residual impacts may remain because avoidance of impacts on 95% or more of a given population may not be feasible. If it is determined that impacts on plant species are unavoidable and greater than 5% of a population would be impacted, such impacts would be significant because of the regional rarity of these species and therefore the magnitude of the potential impact on regional populations of these species (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance"). Implementation of **Mitigation Measure BIO-1** would reduce impacts on listed species by enhancing, managing, and protecting populations of these species so that the proposed program does not substantially reduce the number or restrict the range of rare or endangered plants or have a substantial adverse effect on special-status plants.

In addition, while it is not expected that program activities would occur near the restricted populations of Butano Ridge Cypress in Pescadero Creek County Park (see Appendix A), if the County did need to conduct activities near these populations it is possible that even with the avoidance measures described in BMP BIO-16, work near the root zones of individual trees would be considered a significant impact on this federally-listed species due to its regional rarity and the potential harm to the population. **Mitigation Measure BIO-2** would be implemented to establish a tree protection zone around individuals or populations of Butano Ridge Cypress to be avoided, reducing the impact on this species to a less-than-significant level. With implementation of Mitigation Measures BIO-1 and BIO-2, impacts on state and/or federally listed plant species would be **less than significant with mitigation.**

Mitigation Measure BIO-1: Provide Compensatory Mitigation for Special-Status Plant Species

San Mateo County will provide compensatory mitigation for unavoidable impacts on special-status plant populations, where impacts on a special-status species' population is unavoidable and above the specified threshold (i.e., 5% for state or federally-listed species, 10% for CRPR List 1B and 2 species, and 20% for CRPR List 3 or 4 species – see impact discussions BIO-1B and BIO-1C below).

Compensation for unavoidable impacts on populations of special-status plants will be provided by a combination of preservation and enhancement of those species' populations outside program work sites. For impacts on populations (including partial populations) of a specific special-status plant species, compensatory mitigation will include preservation, enhancement, and management of lands that (a) already support equal or greater numbers (and health) of individuals of that species and (b) contain sufficient unoccupied habitat to allow for an increase in populations, the increase being at least equivalent to the number impacted, through habitat enhancement and management. For determining the number of individuals impacted, the highest number of individuals known to be present within the impact area within the prior 10 years (if the impact area has undergone multiple surveys in recent years) will be used to determine the magnitude of the impact to the entire population of the species.

For populations to be preserved, the County will develop a Habitat Mitigation and Management Plan (HMMP), describing the measures that will be taken to enhance and manage the mitigation lands and to monitor the effects of management on special-status plant species. That plan will include, at a minimum, the following:

- a summary of impacts on special-status plant populations and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of the funding mechanism to ensure the long-term maintenance and monitoring of the mitigation lands;
- a description of measures to be undertaken, if necessary, to enhance (e.g., through focused management) the mitigation site for the focal special-status plant species;
- a description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if determined by a qualified botanist to be appropriate and to have a high likelihood of success;
- proposed management activities, such as managed grazing and management of invasive plants, to maintain high-quality habitat conditions for the focal special-status plant species;
- a description of species monitoring measures on the mitigation site, including specific, objective goals and objectives, performance indicators, success criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. Determining specific performance/success criteria requires information regarding the specific mitigation site, its conditions, the biological resources present on the site, the specific plant species for which mitigation is being provided, and the specific enhancement and management measures tailored to the mitigation site and its conditions. The mitigation will be tied to number of individuals or area of occupied habitat that is directly impacted, and final success criteria will include a time frame in which the population will be expected to be recovered (e.g., after five years, the mitigation population will support at least as many individuals as were impacted). In addition, the success criteria will be tied to a nearby reference population to control for regional and temporal variation that will take into account events such as drought and climate fluctuations. Specific criteria will be defined in the HMMP rather than in this DEIR. Nevertheless, the performance/success criteria described in the HMMP will guide mitigation to manage and protect high-quality habitat for, and populations of, the impacted species; and
- a description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria.

After mitigation has been provided for impacts on special-status plant populations in a specific area from a specific year's activities, future (i.e., repetitive) impacts on that area will not require additional mitigation.

If the compensatory mitigation is provided for federally-listed plant species, the HMMP will be provided to the USFWS for review. It is possible that this mitigation measure may be

refined during the Section 7 consultation process with the USFWS (e.g., in the Biological Opinion covering Program effects on federally listed plant species), in which case the refinements required by the USFWS will be implemented. If compensatory mitigation is provided for state-listed plant species, the HMMP will be provided to the CDFW for review. It is possible that this mitigation measure may be refined during the consultation process with CDFW, in which case the refinements required by the CFDW will be implemented.

Mitigation Measure BIO-2: Establish Tree Protection Zones for Ground-disturbing Activities Near Butano Ridge Cypress

If ground-disturbing activities are proposed and unavoidable within 50 feet of an individual of Butano Ridge cypress to be avoided, a tree protection zone (TPZ) will be established to protect those populations. In order to minimize the impacts on Butano Ridge cypress at a maintenance work area, the County will implement the following tree protection measure:

- Butano Ridge cypress trees that are within 50 feet of proposed program activities will be clearly marked for avoidance. Fenced enclosures for individual trees or groups of trees to be protected will be erected at the driplines of trees, where possible, or as established by the County biologist or another qualified biologist. Soil disturbance within this protection zone will not be permitted.

BIO-1B: CRPR 1B or 2 Plants (Less than Significant with Mitigation)

In addition to the listed plant species discussed above, 50 special-status plant species are listed in the CNPS Rare Plant inventory as CRPR 1B or 2, and are either known to occur or have potential to occur in San Mateo County where proposed program activities could take place. Table 3.4-1 in Section 3.4-1 lists information about the distribution, legal status, general habitat requirements, and known occurrences in the program area of CRPR 1B or 2 plant species.

As noted for listed plants above, some special-status plants listed as CRPR 1B or 2 have a lower likelihood of being impacted by program activities. This is due to their limited distribution or their occurrence in restricted habitats where no program activities are projected to occur in the next 5 to 10 years (Tables B-1 and B-2 in Appendix A). For example, Blasdale's bent grass, San Francisco Bay spineflower, sand-loving wallflower, rose leptosiphon, and coastal triquetrella are all restricted to coastal bluff or coastal dune habitats, which are unlikely to be impacted. Species associated with serpentine habitats, such as Franciscan onion, San Francisco collinsia, woodland woollythreads, and Crystal Springs lessingia, are unlikely to be impacted because proposed program activities in serpentine areas would be limited. Montara manzanita is located in northern maritime chaparral on Montara Mountain where proposed program activities are not projected to occur. Marin checker lily, perennial goldfields, Santa Cruz clover, and marsh scorzella occur in relatively intact and undisturbed coastal prairie habitats where Program activities would be limited, if they occur at all. Special-status Monterey pine only includes native stands, as opposed to populations and individuals which have been widely planted over the last century; native stands are restricted to a few locations near Año Nuevo State Park where program activities are not projected to occur.

Despite the limited distribution of many of the CRPR 1B or 2 species, and the expectation that proposed program activities are unlikely to take place where they occur, the potential for the

proposed program to result in impacts on these species cannot be ruled out. Maintenance activities may need to occur in some of the area identified above or in locations where there is suitable habitat for CRPR 1B or 2 species but where surveys have not been conducted. More detailed discussions of the impacts of potential program activities on listed plants are grouped below by the category of maintenance activity (i.e., creek bank stabilization; culvert, storm drainage, channel, and bridge maintenance; vegetation management; road and trail maintenance; and marina maintenance).

Bank Stabilization. Potential impacts on CRPR 1B or 2 plant species as a result of bank stabilization activities would be similar to those described for listed plants above. Implementation of a number of BMPs would avoid and minimize impacts on these species. Such BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 6, 7, 9, 10, and 19. In addition, implementation of BMP-24 would minimize the potential impacts of pathogens such as *Phytophthora,* and BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of these species. More importantly, BIO-16 would be implemented specifically to avoid and minimize impacts on special-status plants as described under Impact BIO-1A above.

Culvert, Storm Drainage, Channel, Bridge, Roadside Ditches and GI Maintenance. Similar to the impacts described for bank stabilization activities above, culvert, storm drain, channel, bridge, roadside ditch, and GI repair and maintenance activities may impact CRPR 1B or 2 special-status plant species through temporary loss and degradation of suitable habitat due to the alteration of hydrology through soil compaction, alteration of surface drainage patterns due to movement of heavy equipment, and the introduction of non-native species. Individual plants and populations may be lost as a result of mechanical or physical removal of vegetation at the work site, and damage to special-status plants may occur due to crushing by equipment, trampling by personnel, compaction of soil, and minor fuel and oil spills. Sediment removal activities would impact special-status growing in those channels if they are growing in the vegetation that has colonized the sediment aggradation in a channel bottom. However as stated above in Impact BIO-1A, these settings are typically colonized by common weedy wetland vegetation and as such, do not represent suitable habitat for special-status plant species.

With implementation of BMPs as described under bank stabilization above, and due to the fact that suitable habitat for special-status species in drainages and channels where maintenance activities would occur is limited, culvert, storm drain, channel, bridge, roadside ditch, and GI repair and maintenance activities impacts on these species would be minimal, if they occur at all.

Vegetation Management and Road and Trail Maintenance. Potential impacts on CRPR 1B or 2 plant species as a result of vegetation management and road and trail maintenance activities would be similar to those described for listed plants above. However, with implementation of BMPs, as described for bank stabilization, and due to the very localized and limited distribution of suitable habitat for these species, vegetation management and road and trail maintenance impacts on these species would be minimal, if they occur at all.

Some vegetation management activities, particularly those aimed at fuel reduction, grazing for thatch management in grasslands, and invasive plant control would have a potentially

beneficial impact on special-status plant populations that are present or which have a seed bank present and which are threatened by factors such as competition from non-native invasive species, dense thatch, shrub and/or tree fuel loads. If a special-status plant species is present and is tolerant of some disturbance, then there is a strong likelihood that the vegetation management activity would result in a long-term benefit on that population. Implementation of **Mitigation Measure BIO-3** below would ensure that any short-term impacts are reduced to a less-than-significant level and result in a long-term benefit on those populations.

Marina Maintenance. No suitable habitat for CRPR 1B or 2 plant species is present where marina maintenance activities would occur. Thus, such activities would not result in impacts on CRPR 1B or 2 plants.

Applicable Best Management Practices

The County would implement the following BMPs during proposed program activities to reduce impacts on CRPR 1B or 2 plant species. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-16: Avoid Special-Status Plant Species
- BMP BIO-17: Sudden Oak Death Controls
- BMP BIO-18: Invasive Plant Controls
- BMP BIO-23: Burn Piles
- BMP BIO-24: Pathogen Control
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-19: Dust Management Controls

Conclusion

Implementation of BMPs, and BMP BIO-16 in particular, would avoid or minimize impacts on CRPR 1B or 2 plant species, by identifying program activities that might occur near populations of special-status plant species, identifying occurrences of these plants near proposed work areas, identifying measures to avoid those populations where feasible, and/or implementing measures to minimize impacts (e.g., preserving the seedbank).

Nevertheless, residual impacts may remain because proposed program activities may not be able to avoid a large enough percentage of the population to prevent a substantial impact. Because CRPR 1B or 2 plant species are generally somewhat more widespread than listed plant species, the threshold for avoidance of a substantial impact on CRPR 1B or 2 plant species is considered 10%. If impacts on CRPR 1B or 2 plant species are unavoidable and

greater than 10% of a population would be impacted, such impacts would be significant (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance") because of the potential to substantially reduce the size of the regional population. Implementation of Mitigation Measure BIO-1 would reduce the proposed program's impact on CRPR 1B or 2 plant species to a less-than-significant level.

As described above, there are some special-status plant species for which certain vegetation management activities may have a beneficial effect. These include species that are tolerant of intermediate and short-term disturbance. A review of the species in Table 3.4-1 identifies the following CRPR List 1B or 2 species that are disturbance-tolerant and that are likely to benefit from selected vegetation management activities, such as thatch removal by grazing, invasive tree and shrub removal for fuel reduction, and invasive weed control:

- Blasdale's bent grass (Agrostis blasdalei)
- Bent-flowered fiddleneck (Amsinckia lunaris)
- Anderson's manzanita (Arctostaphylos andersonii)
- Montara manzanita (Arctostaphylos montaraensis)
- Kings Mountain manzanita (Arctostaphylos regismontana)
- Congdon's tarplant (Centromadia parryi ssp. congdonii)
- San Francisco Bay spineflower (Chorizanthe cuspidata var. cuspidata)
- Sand-loving wallflower (Erysimum ammophilum)
- Diablo helianthella (Helianthella castanea)
- Perennial goldfields (Lasthenia californica ssp. macrantha)
- Rose leptosiphon (Leptosiphon rosaceus)
- Crystal Springs lessingia (Lessingia arachnoidea)
- Indian Valley bush-mallow (Malacothamnus aboriginum)
- Arcuate bush-mallow (Malacothamnus arcuatus)
- Davidson's bush-mallow (Malacothamnus davidsonii)
- Hall's bush-mallow (Malacothamnus hallii)
- Woodland woollythreads (Monolopia gracilens)
- Monterey pine (Pinus radiata), native populations only
- Chaparral ragwort (Senecio aphanactis)
- Santa Cruz microseris (Stebbinsoseris decipiens)

For the above species, if impacts from vegetation management activities are unavoidable and greater than 10% of a population would be impacted, Mitigation Measure BIO-3 would be implemented to monitor the temporary impact and ensure that the proposed program does not substantially reduce the number of or restrict the range of rare or endangered plants or have a substantial adverse effect on special-status plants. For CRPR List 1B or 2 species that are not listed above, or for impacts to the species above greater than the 10% threshold from a bank stabilization, bridge repair, or culvert maintenance activity, Mitigation Measure BIO-

1 will be implemented for any impact over the 10% threshold. Implementation of these mitigation measures would reduce impacts on all CRPR 1B or 2 special-status plant species to a level that is **less than significant with mitigation**.

Mitigation Measure BIO-3: Monitor Temporary Impact from Vegetation Management Activities on "Disturbance-Tolerant" Special-Status Plant Species

If vegetation management activities that could provide a long-term benefit to special-status plant species (e.g., grazing for thatch removal, invasive plant species removal, shrub and tree removal for fuel reduction, etc.) are proposed and impacts on special-status plant species are unavoidable and greater than a certain threshold (i.e., 10% for CRPR List 1 and 2 species and 20% for CRPR List 3 and 4 species [see Impact BIO-1C below]), the following measures will be implemented.

- If the vegetation management activity is likely to result in any amount of ground disturbance, then prior to implementation of the maintenance activity, the County will salvage plant material prior to disturbance. This could include removing and retaining the topsoil prior to the implementation of maintenance activities to salvage the seed bank and/or propagules, such as bulbs, corms, etc.

- Success criteria will be developed to evaluate the progress of the population following the maintenance activity. As with the development of the HMMP described under Mitigation Measure BIO-1 the specific performance/success criteria for this monitoring will depend on information regarding the specific site, its conditions, the biological resources present on the site, and the specific plant species. The success criteria will be tied to number of individuals or area of occupied habitat that is directly impacted, and final success criteria will be clearly state a timeframe in which the population will be expected to be recovered (e.g. after five years, the population will still support at least as many individuals as were impacted). In addition, the success criteria will be tied to a nearby reference population to control for regional and temporal variation that would take into account events such as drought and climate fluctuations.

- The population must show evidence that it is recovering in the initial year following the maintenance activity. This requirement will be modified accordingly if the reference population is also in decline indicating that regionally the species is in decline for a reason other than the maintenance activity (e.g., drought).

- If plants are not observed to be recovering from the maintenance activity and the reference population is not in decline, then the County will work with a qualified botanist to develop a restoration plan for the impacted population, either using the salvaged plant material or plant material from the same watershed. The restoration plan will generally follow the format of the HMMP described in Mitigation Measure BIO-1, describing the measures that will be taken to enhance and manage the mitigation population and to monitor the development of the population towards specific success criteria. The County will monitor the impacted population for three years. By year three, the population needs to show an increasing trend toward improvement. If the population is not showing improvement, then the County will provide compensatory mitigation for the loss of that portion of the population as described in Mitigation Measure BIO-1.

BIO-1C: CRPR 3 or 4 Plants (Less than Significant with Mitigation)

Thirty-one special-status plant species are listed in the CNPS Rare Plant inventory as CRPR 3 or 4, and either known to occur or have potential to occur in San Mateo County where proposed program activities could take place. Table 3.4-1 lists information about the distribution, legal status, general habitat requirements, and known occurrences in the program area of CRPR 3 or 4 plant species.

The potential impacts of proposed program activities on CRPR 3 or 4 plant species are similar to those discussed above in BIO-1B. The mechanisms by which impacts are expected to occur for CRPR List 3 or 4 species are the same as that discussed previously for CRPR List 1B or 2. The difference is that CRPR List 3 or 4 plant species tend to be more widespread and abundant than CRPR List 1B or 2 species, and therefore are less likely to experience a significant impact.

Implementation of a number of BMPs would avoid and minimize impacts on these species. Such BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 6, 7, 9, 10, and 19. In addition, implementation of BMP-24 would minimize the potential impacts of pathogens such as *Phytophthora,* and BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of these species. More importantly, BMP BIO-16 would be implemented specifically to avoid and minimize impacts on listed plants as described under Impact 1A and 1B above.

Applicable Best Management Practices

The County would implement the following BMPs during proposed program activities to reduce impacts on CRPR 3 or 4 plant species. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-16: Avoid Special-Status Plant Species
- BMP BIO-17: Sudden Oak Death Controls
- BMP BIO-18: Invasive Plant Controls
- BMP BIO-23: Burn Piles
- BMP BIO-24: Pathogen Control
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-19: Dust Management Controls

Conclusion

Implementation of BMPs, and BMP BIO-16 in particular, would avoid or minimize impacts on CRPR 3 or 4 plant species by identifying proposed program activities that might occur near population of special-status plant species, identifying occurrences of these plants near proposed work areas, identifying measures to avoid those populations, where feasible, and/or implementing measures to minimize impacts (e.g., preserving the seedbank).

Nevertheless, residual impacts may remain because Program activities may not be able to avoid a large enough percentage of the population to prevent a substantial impact. Because CRPR 3 or 4 plant species are generally somewhat more widespread than CRPR 1B or 2 plant species, the threshold for avoidance of a substantial impact on CRPR 3 or 4 special-status plant species is considered 20%. If impacts on CRPR 3 or 4 plant species are unavoidable and greater than 20% of a population would be impacted, such impacts would be significant because of their regional rarity (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance") because of the potential to substantially reduce the size of the regional population. Implementation of Mitigation Measure BIO-1 would reduce the impact on CRPR 3 or 4 plant species to a less-than-significant level.

As discussed in Impact BIO-2A, there are some CRPR 3 or 4 special-status species for which certain vegetation management activities may have a beneficial effect. These include species that are tolerant of intermediate and short-term disturbance. A review of the species in Table 3.4-1 identified the following CRPR 3 or 4 species that are disturbance-tolerant and that are likely to benefit from selected vegetation management activities:

- branching beach aster (*Corethrogyne leucophylla)*
- Brewer's calandrinia (*Calandrinia breweri)*
- California androsace (*Androsace elongata* ssp. *acuta)*
- *Ca*lifornia bottle-brush grass (*Elymus californicus)*
- *co*ast iris (*Iris longipetala)*
- Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri)*
- harlequin lotus (*Hosackia gracilis)*
- *ma*rsh horsetail (*Equisetum palustre)*
- *oc*ean bluff milk-vetch (*Astragalus nuttallii* var. *nuttallii)*
- San Francisco gumplant (*Grindelia hirsutula* var. *maritima)*
- San Francisco wallflower (*Erysimum franciscanum)*
- vernal barley (*Hordeum intercedens)*

For the above species, if impacts are unavoidable and greater than 20% of a population would be impacted, Mitigation Measure BIO-3 would be implemented to monitor the temporary impact and confirm a longer-term beneficial effect from the vegetation management activity. For CRPR 3 or 4 species that are not listed above, Mitigation Measure BIO-1 will be implemented for any impact over the 20% threshold. Implementation of Mitigation Measure BIO-3, coupled with implementation of Mitigation Measure BIO-1, would

reduce impacts on all CRPR 3 or 4 special-status plant species to a less-than-significant level. This impact would be **less than significant with mitigation**.

BIO-1D: Bay Checkerspot Butterfly (Less than Significant)

The Bay checkerspot butterfly, federally listed as threatened, has an extremely limited distribution within the program area, occurring only in native grasslands on serpentine soils in San Bruno Mountain State and County Park and Edgewood Park. Thus, only Program activities in these limited locations have any potential to adversely affect this species and its larval host plants, such as *Plantago erecta a*nd *Castilleja* spp.

Creek Bank Stabilization. The County has not recently performed any bank stabilization projects within either San Bruno Mountain State and County Park or Edgewood Park and has no plans to conduct such work in these areas in the next 5 to 10 years (see Appendix A). In addition, suitable habitat for the Bay checkerspot butterfly's larval and adult food plants do not occur in natural stream channels. However, suitable habitat may occur in uplands adjacent to channels. Thus, in the absence of BMPs, the Bay checkerspot butterfly and its host plants may be impacted by people or equipment moving through uplands adjacent to bank stabilization projects. If bank stabilization activities were to occur in San Bruno Mountain State and County Park or Edgewood Park, equipment use, vehicle traffic, and worker foot traffic along bank stabilization areas may result in the injury or mortality of Bay checkerspot butterflies (including larvae and pupae) or their host plants (e.g., physically breaking, crushing, wilting, burying, or uprooting plants and damaging their roots as a result of soil disturbance by heavy equipment). In addition, Bay checkerspot butterflies and their host plants may be affected by petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment. Collectively, these impacts are potentially significant (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance"), due to their potential to substantially reduce the regional populations of this federally listed species and the reintroduction efforts in San Mateo County.

Implementation of a number of BMPs that are routine for all Program activities would help to avoid and minimize impacts on Bay checkerspot butterflies and their food plants. Such general BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 7, 9, 10, and 19. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species. More importantly, BMP BIO-12 would be specifically implemented to avoid impacts on the Bay checkerspot butterfly and its habitat. Prior to Program activities within suitable habitat for the Bay checkerspot butterfly, a qualified biologist would survey the work area to identify any areas supporting larval host plants. Larval host plants would be protected by establishing buffer zones around individual plants or populations. Maintenance personnel and equipment would not operate within such areas.

As discussed for serpentine-associated special-status plants above, all Program activities involving the combustion of fossil fuels may result in the emission of nitrogen compounds. An increase in nitrogen deposition on serpentine grasslands has been reported to favor the establishment and growth of non-native annual grasses and forbs (Weiss 1999). Program activities would result in air pollutant emissions from on-road and off-road vehicle use, including increases in nitrogen (NOx) emissions. Thus, indirect impacts associated with Program activities include the deposition of atmospheric nitrogen-containing compounds on

serpentine grasslands within the program area. However, bank stabilization activities are of very short duration and would result in very limited NOx emissions, and the effects of vehicular activities associated with the Program on serpentine endemic plant species are expected to be negligible in the context of all the nitrogen deposition resulting from other sources, both within and outside the program area.

The extent of long-term effects on Bay checkerspot butterfly habitat resulting from bank stabilization activities is unknown because all bank stabilization activities cannot be projected and because the magnitude of the effect of stabilization depends on the type of repair method used. However, the extent of bank stabilization work that is expected to occur in habitat for this species would be very low, judging from activities that are anticipated in the Program's first 5 to 10 years, and implementation of BMPs would result in the identification and avoidance of areas containing Bay checkerspot larval host plants. As a result, no significant impacts on the Bay checkerspot butterfly or its habitat are expected to occur due to bank stabilization activities.

Culvert, Storm Drainage, Channel, Bridge, and Roadside Ditches and GI Maintenance. As described above, suitable habitat for the Bay checkerspot butterfly's larval and adult food plants does not typically occur in creeks and storm drainages. However, in the absence of BMPs, these species may be significantly impacted by people or equipment moving through uplands adjacent to culvert, storm drainage, channel, bridge, roadside ditch, and GI maintenance projects; such projects are expected to occur in both San Bruno Mountain State and County Park and Edgewood Park. Impacts on Bay checkerspot butterflies due to these maintenance activities are expected to be similar to those described for bank stabilization above. Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts.

The extent of culvert, storm drainage, channel, bridge, roadside ditch, and GI maintenance projects that are expected to occur in habitat for the Bay checkerspot butterfly would be very low judging from the activities that are anticipated in the Program's first 5 to 10 years, and implementation of BMPs would result in the identification and avoidance of areas containing Bay checkerspot larval host plants. As a result, impacts on Bay checkerspot butterfly habitat due to these maintenance activities are expected to be less than significant.

Vegetation Management. Similar to the potential effects of bank stabilization activities described above, in the absence of BMPs potentially significant impacts of vegetation management activities include mortality or injury of Bay checkerspot butterflies due to crushing by personnel or equipment. In addition, this species could be significantly impacted by the loss of host plants because of mechanical, physical, or chemical (i.e., herbicide) clearing in the activity area; soil compaction; and damage to host plants. Further, this species may be impacted by the conversion of habitat, which can occur due to the unintentional introduction of non-native grasses and forbs to areas on or near serpentine soils. In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact Bay checkerspots and their host plants. Implementation of a number of BMPs as described under bank stabilization above, as well as BMP BIO-23 for burn piles, would avoid or minimize such impacts.

The extent of vegetation management projects that are expected to occur in habitat for this species may be low judging from the activities that are anticipated in the Maintenance Program's first 5 to 10 years, and in the event that some vegetation management is necessary

within Bay checkerspot habitat, implementation of BMPs would result in the identification and avoidance of areas containing Bay checkerspot larval host plants. As a result, impacts on habitat for the Bay checkerspot butterfly due to vegetation management activities are expected to be less than significant.

Road and Trail Maintenance. Similar to the potential effects of vegetation management activities described above, in the absence of BMPs potential significant impacts of road and trail maintenance include mortality of individual Bay checkerspot butterflies due to crushing by personnel or equipment and incidental loss or damage of host plants during mechanical, physical, or chemical clearing of invasive plants in the activity area. Further, this species may be impacted by the loss of habitat that could result from slip-out and slide repairs (e.g., due to the addition of hardscape). Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts.

The extent of road and trail maintenance activities that are expected to occur in habitat for this species may be very low judging from the activities that are anticipated in the Program's first 5 to 10 years, and in the event that some road and trail maintenance is necessary within Bay checkerspot habitat, implementation of BMPs would result in the identification and avoidance of areas containing Bay checkerspot butterfly larval host plants. As a result, impacts on habitat for the Bay checkerspot butterfly due to road and trail maintenance activities are expected to be less than significant.

Marina Maintenance. No suitable habitat for the Bay checkerspot butterfly is present in areas where marina maintenance activities would occur.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the Bay checkerspot butterfly and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-12: Measures to Protect Special-Status Butterflies
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-19: Dust Management Controls

Conclusion

Proposed program activities are not expected to occur in or adjacent to high-quality habitat likely to regularly support the Bay checkerspot butterfly. Further, implementation of BMPs would reduce impacts on this species and its habitat so that impacts would be **less than significant**.

BIO-1E: Mission Blue Butterfly, San Bruno Elfin Butterfly, and Callippe Silverspot Butterfly (Less than Significant)

The Mission blue butterfly, San Bruno elfin butterfly, and callippe silverspot butterfly, all federally listed as endangered, have limited distributions in the program area, and only Program activities occurring in San Bruno Mountain State and County Park would have any potential to adversely affect these species. The Mission blue butterfly, San Bruno elfin butterfly, and callippe silverspot butterfly were assessed together because the potential impacts of the proposed Program on these species and their larval hostplants (*Lupinus* spp. for Mission blue, *Sedum spathulifolium* for San Bruno elfin, and *Viola pedunculata* for callippe silverspot) would be similar.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches and GI Maintenance; Vegetation Management; and Road and Trail Maintenance*. Potential impacts on Mission blue, San Bruno elfin, and callippe silverspot butterflies as a result of bank stabilization; culvert, storm drainage, channel, and bridge maintenance activities; vegetation management; and road and trail maintenance would be similar to those described for the Bay checkerspot butterfly above. Although host plants for the Mission blue butterfly, San Bruno elfin butterfly, and callippe silverspot butterfly do not occur on serpentine soils, nitrogen deposition could potentially have an effect on habitat quality in areas providing suitable habitat for these butterflies and their hostplants, as discussed for Bay checkerspot. Implementation of a number of BMPs, as described for the Bay checkerspot butterfly, would avoid or minimize Program impacts on these species and their food plants.

Marina Maintenance. No suitable habitat for the Mission blue butterfly, San Bruno elfin butterfly, or callippe silverspot butterfly is present in areas where marina maintenance activities would occur.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the Mission blue, San Bruno elfin, and callippe silverspot butterflies and their habitat. A description of each best management practice (BMP) is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-12: Measures to Protect Special-Status Butterflies
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-19: Dust Management Controls

Conclusion

Program activities are not expected to occur in or adjacent to high-quality habitat likely to regularly support the Mission blue, San Bruno elfin, or callippe silverspot butterflies. Further, implementation of BMPs would reduce impacts on these species and their habitat so that impacts would be **less than significant**.

BIO-1F: Monarch Butterfly (Less than Significant)

The monarch butterfly, a federal candidate for listing, occurs in the program area primarily as a migrant in the fall and spring. In addition, 14 overwintering sites have been documented along the western coastline in San Mateo County (Xerces Society 2016). However, only three of these sites have been verified to be active since 2010 (Xerces Society 2016). The species also breeds in the program area, albeit locally and in low numbers.

The most vulnerable element of the monarch annual cycle may be the overwintering period (Pyle and Monroe 2004 as cited in Western Association of Fish and Wildlife Agencies 2019), as so many individuals are concentrated in a few locations. Monarchs have very specific overwintering habitat requirements, including trees groves with high humidity; dappled sunlight; a nearby water source; and protection from high winds, storms, and fluctuating temperatures (Xerces Society 2017). In California, monarch butterflies have been known to cluster in groves of Monterey pine, blue gum eucalyptus, red river gum eucalyptus (*Eucalyptus camaldulensis*), Monterey cypress (*Cupressus macrocarpa*), coast redwood, coast live oak, western sycamore, willow (*Salix* spp.), and acacias (*Acadia* spp.) (U.S. Forest Service 2015). Monarchs typically begin arriving at overwintering sites in mid-October (Hill et al. 1976), where they form dense clusters on the branches and leaves of trees.

Culvert, Storm Drainage, Channel, Bridge and Ro*adside Ditches and GI Maintenance; Vegetation Management; and Road and Trail Maintenance*. The County has no plans to conduct maintenance activities near known occupied overwintering sites for the monarch butterfly; nevertheless, suitable habitat is present in the program area. Thus, in the absence of BMPs, it is feasible that such activities could occur sufficiently close to overwintering site to result in disturbance. Program activities resulting in alteration of habitat characteristics of monarch overwintering sites (e.g., tree trimming or removal) could result in the degradation or loss of overwintering habitat, a significant impact (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance") due to the potential to substantially reduce the regional population of this species. In addition, Program activities causing a substantial increase in noise, dust, movement of equipment, or human presence may have a direct effect on the behavior of overwintering monarchs, causing them to abandon an overwintering site.

In addition, monarch butterflies breed in low numbers in the program area. If breeding monarch butterflies are present, maintenance activities (e.g., mowing, fuel management) that affect native milkweed plants could potentially impact small numbers of monarchs and their hostplants. However, because San Mateo County is not known to be an important breeding area, and Program activities would affect a very low proportion of the regional populations of host plants, Program impacts on breeding monarchs and their larval host plants would not be substantial. In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact monarch butterfly eggs, larvae, and host plants, as well as wintering habitat.

Implementation of a number of BMPs would help to avoid and minimize impacts on monarch butterflies and their overwintering sites. Such general BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, and 19. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species, and BMP-23 would avoid the spread of fire from burn piles. More importantly, BMP BIO-12 would be specifically implemented to avoid impacts on wintering concentrations of the monarch butterfly and wintering habitat. If, based on a review of current CNDDB records or the latest information available from the Xerces Society (https://xerces.org/ state-of-the-monarch-butterfly- overwintering-sites-in-california/) historically or currently occupied overwintering habitat for the monarch butterfly is determined to exist in or adjacent to the area where ground disturbing activities are planned to occur, areas supporting overwintering habitat for the monarch butterfly would be identified by a qualified biologist and maintenance activities during fall and winter months, when wintering concentrations of monarch butterflies are present, will be avoided to the extent practicable. Prior to the onset of maintenance activities, historically or currently occupied trees/groves would be protected from disturbance by the establishment of a 100-foot buffer zone around the tree/grove. Maintenance personnel and equipment would not operate within such areas.

Marina Maintenance. No suitable overwintering habitat or breeding habitat for the monarch butterfly is present in areas where marina maintenance activities would occur.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the monarch butterfly and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-12: Measures to Protect Special-Status Butterflies
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-19: Dust Management Controls

Conclusion

Program activities are not expected to occur in or adjacent to occupied overwintering habitat for the monarch butterfly. Further, implementation of BMPs would reduce impacts on this species and its habitat so that impacts are **less than significant**.

BIO-1G: CCC Steelhead and CCC Coho Salmon (Less than Significant)

In the program area, CCC steelhead, federally listed as threatened, are known to spawn in the San Pedro Creek, Pilarcitos Creek, San Gregorio Creek, Pescadero Creek, San Francisquito Creek, San Mateo Creek, Butano Creek, and Gazos Creek Watersheds (Spence et al. 2008, CEMAR 2008) and could potentially occur in other coastal streams. The CCC coho salmon,

federally listed as threatened and state listed as endangered, has recently been recorded spawning in the southwestern portion of the program area in Pescadero Creek (POST 2018), and the species was historically recorded in Butano and San Gregorio Creeks (NMFS 2001 as cited in NMFS 2016a). These species were assessed together because the potential impacts of the proposed program on them would be similar.

Creek Bank Stabilization. As indicated in Tables B-1 and B-2 in Appendix A, creek bank stabilization activities are projected in the next 5 to 10 years, at eight locations where the CCC steelhead and/or CCC coho salmon have the potential to occur. However, bank stabilization activities take place on an as-needed basis, based on the risk for flooding, erosion, or bank failure. Thus, bank stabilization may occur at additional maintenance sites where these species have the potential to occur. In average hydrologic years, the County may work on up to three creek bank stabilization/slip-out projects each year; however, the total work distance along streambanks would not exceed 750 feet (for all sites). Following a wet hydrologic year (when average seasonal precipitation exceeds the 75th percentile), the County may need to work on up to seven creek bank stabilization projects per year and the total annual work distance along streambanks would not exceed 1,500 feet (for all sites). Note that not all stabilization occurs along salmonid streams.

As described in Section 2.4, to the extent feasible, equipment used during creek bank stabilization activities is operated from top of bank and work is completed during the dry summer months (i.e., June 1 through October 31) when creek flows are low or absent. As a result, adult steelhead and coho are not expected to be present at bank stabilization sites when dewatering and fish relocation occur. However, fry and juveniles may be present, especially if stabilization occurs near spawning or rearing habitat. Individuals trapped within the work area may suffer injury or mortality due to stranding, degraded water quality, reduced food supplies, or high water temperatures. Salmonids occurring in reaches adjacent to, but outside, the bank stabilization area would likely flee the area because of the movement of equipment and personnel, and the noise associated with movement of heavy equipment. Although such noise would not approach levels that could be physically harmful to these fish, the disturbance of salmonids in adjacent areas could alter their behavior (e.g., by causing them to spend more time within cover and less time foraging) and/or cause fish to avoid using adjacent habitat that would otherwise be suitable for them.

It is possible that bank stabilization projects that occur along steelhead or coho accessible streams may necessitate fish relocation efforts (BMP BIO-2). Proposed fish relocation methods are consistent with those defined as reasonable and prudent by NMFS for projects concerning several California ESUs of coho salmon and steelhead (e.g., NMFS 2008, 2016b). Nevertheless, during capture and relocation, fry and juveniles may be subjected to stress, injury, or mortality associated with netting, electrofishing, temporary captivity, and release at the relocation site. While the relocation sites would be carefully selected by County biologists or other qualified biologists based on criteria specified in BMP BIO-2, there is some potential for changes in temperature or water chemistry between the capture and release site, or densities of predators or competitors at the release site, to result in increased stress, injury, or mortality. However, the benefits of steelhead and coho relocation far outweigh the complete loss of individuals that would occur if fish were not relocated before dewatering took place.

In the absence of BMPs, bank stabilization activities, including those that require dewatering and those that do not, may result in increased turbidity within and downstream from the

footprint of proposed program activities due to mobilization of fine sediments. The loss of riparian vegetation on stream banks due to bank stabilization activities may also result in a short-term increase in erosion and sedimentation. Increased turbidity may reduce the health of juvenile salmonids and make predatory and prey detection more difficult. In addition, sediment can adversely affect spawning habitat downstream by filling voids between gravels where eggs are laid. Similarly, sedimentation of voids between larger cobbles reduces refugia used by juveniles to escape predators and high winter flows. However, BMPs GEN-22, EC-1 through EC-14, and SC-1 through SC-6 are specifically designed to reduce adverse effects such as increased turbidity, and would thus minimize such effects. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from maintenance vehicles or equipment may also affect the health of individual salmonids within or downstream from the activity area and fresh concrete may release harmful chemicals into the water if rewatering occurs before the concrete has cured. These impacts would be minimized by implementation of BMPs GEN-5 through GEN-16. Further, per BMP BIO-19, following completion of bank stabilization activities, any temporary modifications to the low-flow channels would be reversed so that the channel is contoured to facilitate fish passage at least as well following the activity as it did prior to the stabilization activity. Thus, the direct effects of bank stabilization on CCC steelhead and CCC coho salmon habitat would be relatively short in duration.

In addition to the adverse effects described above, creek bank stabilization activities may result in both beneficial and adverse indirect impacts on habitat for the CCC steelhead and CCC coho salmon. Because the proposed program would facilitate the speed with which the County is able to address slip-outs, beneficial effects include reducing sediment input into salmonid streams and preventing larger-scale bank failures. However, replacement of a natural or "soft" bank, especially one supporting riparian vegetation, with "hard" substrate such as concrete or riprap that is not conducive to riparian revegetation would likely result in an adverse indirect effect on habitat. Such adverse effects would result from the loss of cover and instream complexity associated with the roots or stems of riparian vegetation, the loss of organic input from riparian vegetation that is removed, and the loss of trees that could contribute large woody debris to the channel over time. However, thinning of vegetation could have benefits to steelhead and coho salmon by increasing prey abundance in areas that are currently heavily shaded; this is discussed in detail under *Vegetation Management* below. In addition, hard substrates have less capacity for trapping and holding sediment than vegetated banks, and thus replacement of vegetated banks with hardened features may result in increased siltation of spawning or rearing habitat downstream. Conversely, replacement of a hardened bank with softer stabilization methods, especially those that enhance instream complexity (e.g., through the incorporation of combinations of large rock, rootwads, and vegetation), would result in a considerable net benefit to steelhead and coho salmon by increasing habitat complexity and enhancing refugia, pool-riffle complexes, and rearing habitat. The County would prioritize the use of soft stabilization methods that provide these benefits (e.g., BMP EC-1 through EC-5). Bank stabilization can also have indirect benefits on CCC steelhead and CCC coho habitat by reducing erosion and resulting sediment inputs into streams.

The extent of long-term impacts on CCC steelhead, CCC coho salmon, and their habitat resulting from bank stabilization activities is unknown, both because stabilization activities cannot be fully predicted and because the magnitude of the impact of stabilization depends on the type of repair method used and the location of the repair project. However, as discussed above, the extent of bank stabilization work that is expected to occur in steelhead and/or coho salmon habitat would be relatively low, judging from County maintenance

activities that either have been conducted in recent years or would likely require maintenance in the next 5 to 10 years (see Appendix A). Also, bank stabilization projects are short-duration activities. As a result, and because of the County's prioritization of earthen and biotechnical solutions to bank stabilization (as opposed to use of hardscape) and the potential long-term benefits of bank stabilization on steelhead and coho habitat described above, significant impacts on CCC steelhead and CCC coho habitat are not expected to occur because of program bank stabilization activities.

Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches. T*he maintenance program includes activities associated with several bridges located on main stream channels with steelhead, and culvert maintenance may be necessary within steelhead habitat on tributaries accessible to steelhead (e.g., Rodgers Gulch and Gazos Creek Road), and potentially any fish passage culverts that result from the Pescadero and Butano Creeks Watershed Sediment Total Maximum Daily Load (TMDL) recommendations. Culvert, storm drainage, channel, and bridge maintenance activities generally occur under dry channel conditions. However, if maintenance were necessary where water is in the channel, dewatering would be conducted through use of cofferdams or a clean water bypass. Thus, the impacts of bank stabilization described above could also occur during sediment removal, culvert repair/replacement, and clearing of debris from clogged culverts and other storm drainage facilities because these activities involve removal or disturbance of sediment within creek channels and, potentially, dewatering.

In addition, culvert, storm drainage, channel, and bridge maintenance activities could result in impacts on CCC steelhead and CCC coho salmon due to the removal of gravel, disturbance of the channel bed, and loss of instream complexity. Gravel removal reduces the extent and availability of potential spawning habitat, and possibly rearing habitat, both in the short term by removing existing spawning habitat and in the long term by reducing gravel supply within a creek. However, as indicated in Appendix A, sediment removal activities have occurred, or are projected to occur in the next 5 to 10 years, at only three sites and on only two streams (i.e., Butano and Bradley Creeks) where CCC steelhead and/or CCC coho salmon are known or expected to occur. In addition, sediment removal activities at these locations would be limited to localized sites that are 500 feet in length or less. Given that sediment removal activities are projected in such a limited number of occupied streams and that the streambeds in the locations of the proposed activities are composed of finer sediments rather than gravel, sediment removal is not expected to result in the loss of spawning and rearing habitat to the point that population-level effects on CCC steelhead or CCC coho salmon would occur.

Culvert, storm drainage, channel, bridge, and roadside ditch maintenance activities may occur along or near stream reaches that are inaccessible to steelhead and/or coho salmon, but that are tributary to accessible streams. Although such activities could potentially result in significant impacts on steelhead, coho salmon, and their habitat downstream due to mobilization of fine sediments, implementation of BMPs, as described under bank stabilization above, would reduce such impacts to less than significant.

Repair of the tide gate at the mouth of San Bruno Creek, where there is at least a low potential for steelhead to occur, may include removing accumulated debris and trash, repainting tide gates for corrosion protection, and replacing tide gate flaps. Some of these activities would not require dewatering of the channel or operation of heavy equipment within the channel, so there is no potential for injury or mortality of steelhead. Implementation of BMPs, such as BMPs EC-1 through EC-14, SC-1 through SC-6, GEN-5 through GEN-16, and GEN-21 to prevent

the runoff and discharge of pollutants, would minimize impacts of these activities on water quality in areas supporting these species. In-water maintenance activities at the tide gate may result in temporary impacts on water quality. However, the extent and levels of turbidity associated with maintenance activities are not expected to result in harm or injury to steelhead, or behavioral responses that impair migration or foraging, or make steelhead more susceptible to predation. If individuals temporarily relocate from areas of increased turbidity, or due to disturbance during maintenance activities, habitat of similar or better value is available in San Francisco Bay adjacent to the program area for displaced individuals. Adjacent habitat areas also provide adequate carrying capacity to support individual steelhead that are temporarily displaced due to the low numbers of individuals of these species that are expected to occur at the mouth of San Bruno Creek (if they occur there at all). For these reasons, the potential effects on steelhead of minor and localized areas of elevated turbidity and disturbance associated with tide gate maintenance activities are expected to be less than significant.

It is possible that dewatering may be necessary during some tide gate maintenance, however. For example, replacement of the flap gates, and possibly repair of concrete associated with the gates, could possibly necessitate dewatering. In the event that dewatering is necessary for tide gate maintenance or repair, implementation of BMP DW-1 would ensure that no steelhead or salmon are trapped in the dewatering area or otherwise harmed by dewatering.

Sediment removal may also have benefits on steelhead and coho salmon where plugs of sediment form impediments to salmonid migration, making it difficult for individuals to move upstream or downstream past these areas. In some cases, culvert replacements or re-alignments are conducted by the County for the primary purpose of improving fish passage along creeks.

Maintenance activities that result in the repeated removal of smaller trees would prevent them from growing into larger trees, and thus over the long term, program activities could reduce the input of large woody debris (LWD) into streams and reduce the development of extensive root systems that provide additional instream complexity. Such complexity is important to steelhead and coho salmon by instigating the development of riffle/pool complexes, which are important for spawning and feeding, and by providing refugia from predators and high flow velocities. Where fallen trees and LWD have accumulated at culvert inlets or outfalls, the County is responsible for removing the trees and woody debris. This type of work is typically conducted on an as-needed basis at County parks and other culverts maintained by the DPW. Direct removal of LWD would result in the removal of instream complexity, thus reducing the availability of cover (thereby potentially increasing predation of CCC steelhead and CCC coho salmon) and refugia that such debris provides during periods of high flow. However, the County recognizes that downed trees and LWD provides habitat functions for salmonids. As such, the County performs a site-specific analysis before removing any downed trees or LWD. Further, if it is determined that removal is necessary, the County may retain the removed material for use elsewhere in San Mateo County, including areas within the Pescadero-Butano Watershed where enhancement of LWD is needed to achieve the numeric targets for LWD loading recently established by the RWQCB as part of the Water Quality Control Plan for the San Francisco Bay Region (RWQCB 2018). Thus, removal of LWD is not expected to result in the degradation of salmonid habitat to the point that population-level effects on CCC steelhead or CCC coho salmon would occur.

*Vegetation Management. N*o dewatering would be necessary for vegetation management activities under the proposed program. Thus, CCC steelhead and CCC coho salmon would not be captured or relocated for vegetation management activities, and there is little potential for direct injury or mortality of individuals during vegetation management. Nevertheless, some of the effects of bank stabilization and culvert, storm drainage, channel, and bridge maintenance activities on CCC steelhead and CCC coho salmon described above could occur during vegetation management activities. For example, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from maintenance vehicles or equipment may affect the health of individual steelhead or coho salmon within or downstream from the activity area. These impacts would be minimized by implementation of BMPs GEN-5 through GEN-16.

Compared to bank stabilization and sediment removal activities, vegetation management would result in much less disturbance of soil and sediment. For vegetation management, such soil disturbance would be limited primarily to incidental (e.g., due to movement of heavy equipment) and sediment releases from the removal of instream vegetation. In addition, removal of vegetation may result in increased erosion of soils if roots of plants that are removed are no longer present to hold soil in place. However, BMPs GEN-22, EC-1 through EC-14, and SC-1 through SC-6 are specifically designed to reduce impacts due to increased turbidity, and would thus minimize such effects.

Riparian vegetation serves many important roles for steelhead and coho salmon, which could be altered by vegetation management. Impacts may include the loss of shading from riparian vegetation that is removed and subsequent increases in stream temperature, and the loss of organic matter that contributes to the aquatic food web, and possibly the subsequent reduction in steelhead and coho salmon prey. Because much of the vegetation to be removed by vegetation management activities consists of herbaceous vegetation, this vegetation regrows relatively quickly (in a matter of a few years). In addition, due to the low stature of the herbaceous vegetation that is to be removed, such vegetation provides relatively little shading and thus likely has little effect on stream temperatures. As a result, in areas where vegetation management is not repeated frequently, effects of vegetation management are largely short-term. Although some larger trees would be removed as well, the number of such large trees to be removed is not expected to be so great as to substantively alter stream temperatures. As a result, vegetation management is likely to have little impact on CCC steelhead and CCC coho salmon because of elevated water temperatures.

Although the loss of organic matter could affect the aquatic food web, there is a benefit to vegetation thinning in areas that are densely shaded. Casagrande (2010), studying steelhead in Uvas Creek in Santa Clara County, found that steelhead grew much more quickly, and thus were much larger by their first winter, at less shaded, somewhat warmer sites, which had higher prey abundance, than at densely shaded, cooler sites. Casagrande (2010) verified that invertebrate biomass was considerably higher at less heavily shaded sites than under a dense forest canopy. His findings confirm those of other studies demonstrating greater stream productivity (Murphy et al. 1981, Bilby and Bisson 1992, Quinn et al. 1997, Ambrose et al. 2004), and greater salmonid production (Wilzbach et al. 1986, 2005, Nislow and Lowe 2006), along reaches with lower canopy closure and higher light levels. In particular, thinning of canopy above riffles (where many aquatic invertebrates are produced) could improve foraging habitat conditions for salmonids. Therefore, thinning of vegetation conducted as part of the proposed program's vegetation management component may have considerable benefits to steelhead and coho salmon by increasing prey abundance in areas that are currently heavily shaded.

Vegetation management activities include the application of herbicides. Herbicides have the potential to result in impacts on CCC steelhead and CCC coho salmon as a direct effect on the survival, reproduction, and growth of individuals, as well as a reduction of the prey base or modification of their habitat. However, such effects would be minimized, as the County is not proposing to use herbicides immediately adjacent to waterbodies occupied by steelhead or coho, would only use herbicide formulations that are approved for aquatic environments, and would adhere to all state and federal regulations concerning herbicide use.

In addition, as indicated in Appendix A, there are only five anticipated routine maintenance sites where vegetation management activities have occurred, or are projected to occur, and where CCC steelhead and/or CCC coho salmon may occur. Thus, with implementation of BMPs GEN-5 through GEN-16, GEN-22, EC-1 through EC-14, and SC-1 through SC-6 vegetation management impacts on the CCC steelhead and CCC coho salmon would be minimal, if they occur at all.

*Road and Trail Maintenance. L*and-based components of the proposed program (e.g., road and trail maintenance) are not expected to result in substantial impacts on CCC steelhead or CCC coho salmon or their habitat because the program would implement BMPs (e.g., GEN-5 through GEN-16) to prevent the runoff and discharge of pollutants from land-based activities to aquatic features.

Marina Maintenance. The County is responsible for maintaining some DPW and Parks Department facilities along the San Francisco Bay shoreline. In addition, the County conducts a variety of marina maintenance activities (e.g., periodic sewer line cleaning, water line inspections, replacement of damaged floats, debris removal from launch ramp, and seawall revetment repair).

Although CCC steelhead may occasionally occur in shoreline maintenance areas, including Coyote Point Marina, migration of juvenile steelhead through the Bay to more productive feeding areas in the Pacific Ocean is expected to be rapid (NMFS 2012). In addition, vegetation and benthic invertebrate populations under the marina docks are expected to be minimal at best due to the shading of the habitat. As detailed in the USACE San Francisco District - Programmatic EFH Consultation for Construction and Maintenance of Overwater Structures (NMFS 2011), estuary plants, including seagrass and algae, are particularly susceptible to light limitation, and under-structure light levels can fall below the threshold required for them to conduct photosynthesis. Thus, shading of aquatic habitat by the docks is likely to adversely affect vegetation, habitat complexity, and primary production (Haas et al. 2002, Struck et al. 2004), which may in turn adversely affect the distribution of steelhead prey species. Further, since 1987, maintenance dredging has been conducted in two of the basins. Dredging directly impacts benthic habitats through mechanical removal and disturbance of substrate and organisms, the latter of which may be taken up with the sediments. Thus, dredging limits the abundance of aquatic vegetation present. Similarly, periodic dredging likely results in the marina supporting prey species for both adult and juvenile steelhead in lower abundance than in less disturbed portions of the Bay. Therefore, due to ongoing maintenance dredging activities, it is unlikely that individual CCC steelhead forage in the Coyote Point Marina frequently or in large numbers. Further, CCC coho salmon appear to have been extirpated, or nearly so, from the South Bay. Thus, individuals of this species forage in shoreline maintenance areas infrequently and in low numbers, if at all.

In the absence of BMPs, land-based components of marina maintenance, including pump out facility maintenance and minor dock repairs (e.g., replacement of damaged cleats, bumper striping, broken gussets, and gusset covers along dock perimeters) could result in significant impacts on CCC steelhead, CCC coho salmon, and their critical habitat due to runoff and discharge of pollutants from land-based activities to aquatic features. However, implementation of BMPs EC-1 through EC-14, SC-1 through SC-6, GEN-5 through GEN-16, and GEN-22, as described above, would minimize this impact.

In-water marina and shoreline maintenance activities, such as replacement of fallen or shifted rip-rap, piling repair and removal of hazardous logs, may result in temporary direct impacts on water quality and disturbance of benthic habitat. The extent of turbidity plumes resulting from the proposed program would depend on the tide, currents, and wind conditions during maintenance activities. However, due to the type of work to be performed, elevations in turbidity levels during project activities are expected to be minor and localized.

Based on the above, the extent and levels of turbidity associated with marina maintenance activities are not expected to result in harm or injury to CCC steelhead or behavioral responses that impair migration, foraging, or make steelhead more susceptible to predation. If steelhead temporarily relocate from areas of increased turbidity, habitat of similar or better value is available in San Francisco Bay adjacent to the program area for displaced individuals. Adjacent habitat areas also provide adequate carrying capacity to support individual steelhead that are temporarily displaced. For these reasons, the potential effects of minor and localized areas of elevated turbidity associated with maintenance activities are expected to be less than significant.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on CCC steelhead, CCC coho salmon, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP DW-1: Channel Dewatering
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/ Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities

- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would avoid or minimize most impacts on CCC steelhead, CCC coho salmon, and their habitat. In addition, the beneficial effects of program activities (e.g., reduction in stream sediment loads due to removal of fine sediments and improvements in stream productivity due to thinning of the riparian canopy) would offset any residual adverse effects on habitat for these species. Thus, this impact would be **less than significant**.

BIO-1H: Southern Green Sturgeon and Longfin Smelt (Less than Significant)

There is no evidence that the green sturgeon, a federally listed species, has ever spawned in any creeks within the program area or anywhere else in the South Bay. Based on this species' preferences for streams having strong flows over large cobbles in deep pools, it is unlikely that South Bay tributaries historically provided suitable spawning habitat, and such habitat is certainly absent now. The species may occur in the program area in tidal waters along the Bay edge at San Francisco International Airport and Coyote Point Recreation Area, albeit infrequently and in low numbers, if at all. In the program area, the longfin smelt, state listed as threatened and a federal candidate for listing, may be present in the tidal waters around San Francisco International Airport and Coyote Point Recreation Area, but the species is not expected to spawn in the program area. The green sturgeon and longfin smelt were assessed together because the potential impacts of the proposed program on these species would be similar.

Culvert; Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; and Road and Trail Maintenance.* Green sturgeon and longfin smelt are not expected to spawn in the program area, and they would not occur in nontidal channels in the program area. As a result, creek bank stabilization; culvert, storm drainage, channel, and bridge maintenance along nontidal channels; vegetation management; and road and trail maintenance are not expected to result in significant impacts on these species or their habitat.

Among these categories of activities, the only activity that could be implemented in an area where these species could occur is repair of the tide gate at the mouth of San Bruno Creek, where there is at least a low potential for green sturgeon and longfin smelt to occur. Such repairs would include removing accumulated debris and trash, repainting tide gates for corrosion protection, and replacing tide gate flaps. Some of these activities would not require dewatering of the channel or operation of heavy equipment within the channel, so there is no potential for injury or mortality of special-status fish. Implementation of BMPs, such as BMPs EC-1 through EC-14, SC-1 through SC-6, GEN-5 through GEN-16, and GEN-21 to prevent the runoff and discharge of pollutants, would minimize impacts of these activities on water quality in areas supporting these species. In-water maintenance activities at the tide gate may result in temporary impacts on water quality. However, the extent and levels of turbidity associated with maintenance activities are not expected to result in harm or injury to green

sturgeon or longfin smelt, or behavioral responses that impair migration or foraging, or make green sturgeon and/or longfin smelt more susceptible to predation. If individuals temporarily relocate from areas of increased turbidity, or due to disturbance during maintenance activities, habitat of similar or better value is available in San Francisco Bay adjacent to the Maintenance program area for displaced individuals. Adjacent habitat areas also provide adequate carrying capacity to support individual sturgeon or longfin smelt that are temporarily displaced due to the low numbers of individuals of these species that are expected to occur at the mouth of San Bruno Creek (if they occur there at all). For these reasons, the potential effects of minor and localized areas of elevated turbidity and disturbance associated with tide gate maintenance are expected to be less than significant to green sturgeon and longfin smelt.

It is possible that dewatering may be necessary during some tide gate maintenance, however. For example, replacement of the flap gates, and possibly repair of concrete associated with the gates, could possibly necessitate dewatering. In the event that dewatering is necessary for tide gate maintenance or repair, implementation of BMP DW-1 would ensure that no green sturgeon are trapped in the dewatering area or otherwise harmed by dewatering.

Marina Maintenance. Impacts on the green sturgeon and longfin smelt due to marina maintenance activities are expected to be similar to those described above for the CCC steelhead and CCC coho salmon. Land-based components of maintenance activities, including pump out facility maintenance and minor dock repairs, are not expected to result in significant impacts on green sturgeon, longfin smelt, or their habitat because the Program would implement BMPs EC-1 through EC-14, SC-1 through SC-6, GEN-5 through GEN-16, and GEN-21 to prevent the runoff and discharge of pollutants from land-based activities to aquatic features. In-water maintenance activities, such as piling repair, replacement of RSP, and removal of hazardous logs, may result in temporary impacts on water quality and disturbance of benthic habitat. However, the extent and levels of turbidity associated with maintenance activities are not expected to result in harm or injury to green sturgeon or longfin smelt, or behavioral responses that impair migration or foraging, or make green sturgeon and/or longfin smelt more susceptible to predation. If individuals temporarily relocate from areas of increased turbidity, or due to disturbance during maintenance activities, habitat of similar or better value is available in San Francisco Bay adjacent to the Maintenance program area for displaced individuals. Adjacent habitat areas also provide adequate carrying capacity to support individual sturgeon or longfin smelt that are temporarily displaced. For these reasons, the potential effects of minor and localized areas of elevated turbidity associated with construction activities are expected to be less than significant to green sturgeon and longfin smelt.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on green sturgeon, longfin smelt, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP DW-1: Channel Dewatering

- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/ Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on the green sturgeon, longfin smelt, and their habitat so that they are **less than significant**.

BIO-1I: Tidewater Goby (Less than Significant)

The tidewater goby, federally listed as endangered, has been recorded in the lower mouths of creeks along the southern portion of the San Mateo County coast, including lower Butano Creek, Pescadero Creek, and San Gregorio Creek (CNDDB 2019).

Creek Bank Stabilization. The County has not recently performed any bank stabilization projects near the mouths of Butano, Pescadero, or San Gregorio Creeks and has no plans to conduct such work in these areas within the first 5 to 10 years of the Program (see Appendix B). However, bank stabilization activities take place on an as-needed basis, based on the risk for flooding, erosion, or bank failure. If bank stabilization were to occur in these areas, the effects on the tidewater goby would be relatively short in duration. These effects include direct impacts similar to those described for the CCC steelhead and CCC coho salmon above, including increased stress, injury, or mortality due to relocation prior to dewatering events; increases in turbidity; and/or decreases in water quality.

Similar to CCC steelhead and CCC coho salmon, the extent of long-term impacts on tidewater gobies and their habitat resulting from bank stabilization activities is unknown. However, the extent of bank stabilization work that is expected to occur in tidewater goby habitat would be very low, if it occurs at all, judging from County maintenance activities that either have been maintained by the County in recent years or would likely require maintenance in the

next 5 to 10 years. As a result, and because of the County's prioritization of earthen and biotechnical solutions to bank stabilization (as opposed to use of hardscape), significant impacts on tidewater gobies and their habitat are not expected to occur because of Program bank stabilization activities.

Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches*. The direct impacts of bank stabilization described above could also occur during sediment removal, culvert repair/replacement, and clearing of debris from clogged culverts and other storm drainage facilities, because these activities involve removal or disturbance of sediment within creek channels and, potentially, dewatering. Culvert, storm drainage, channel, bridge, and roadside ditch maintenance activities generally occur under dry channel conditions. However, if maintenance were necessary when water is in the channel, dewatering would be conducted through use of cofferdams or a clean water bypass.

As described for bank stabilization above, implementation of BMP BIO-2 would minimize impacts of dewatering related to culvert, storm drainage, channel, bridge, and roadside ditch maintenance activities on the tidewater goby, and BMPs EC-1 through EC-14, SC-1 through SC-6, GEN-5 through GEN-16, and GEN 22 would avoid or minimize impacts due to increases in erosion/sedimentation or spill of potentially toxic materials. Further, per BMP BIO-2, tidewater gobies, if present, would be relocated from streams prior to dewatering to minimize the potential for mortality.

As indicated in Appendix A, sediment removal activities have occurred, or are projected to occur, in only one location (i.e., on Pescadero Creek Road at Butano Creek) in the program area where the tidewater goby has the potential to occur. Further, sediment removal activities in channels under the program are limited to localized sites that are 500 feet in length or less. Thus, culvert, storm drainage, channel, bridge, and roadside ditch maintenance activities impacts on the tidewater goby would be minimal, if they occur at all.

Vegetation Management. No dewatering would be necessary for vegetation management. Thus, tidewater gobies would not be captured or relocated for vegetation management activities, and there is little potential for injury or mortality of individuals during such activities. Nevertheless, some of the direct effects of bank stabilization and culvert, storm drainage, channel, and bridge maintenance activities on the tidewater goby described above could occur during vegetation management activities. For example, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from maintenance vehicles or equipment may affect the health of individual tidewater gobies within or downstream from the activity area. These adverse effects would be minimized by implementation of BMPs, as described above.

Compared to bank stabilization and sediment removal activities, vegetation management would result in much less disturbance of soil and sediment. Such soil disturbance would be limited primarily to incidental disturbance during vegetation management activities (e.g., due to movement of heavy equipment) and sediment releases from the removal of instream vegetation. In addition, removal of vegetation may result in increased erosion of soils if roots of plants that are removed are no longer present to hold soil in place. However, BMPs GEN-22, EC-1 through EC-14, and SC-1 through SC-6, are specifically designed to reduce adverse effects such as increased turbidity, and would thus minimize these impacts.

Vegetation management activities include the application of herbicides. Herbicides have the potential to result in impacts on tidewater gobies due to effects on the survival, reproduction, and growth of individuals, as well as reduction of the prey base and modification of habitat. However, such effects would be minimized by the County by only using herbicide formulations that are approved for aquatic environments, by adhering to all state and federal regulations concerning herbicide use. Although mowing occurs along the lower portion of Pescadero Creek Road, adjacent to Butano Marsh, mowing would not result in adverse effects on tidewater goby, and no other vegetation management activities within tidewater goby habitat have occurred, or are projected to occur, in the program area. Thus, vegetation management impacts on the tidewater goby would be minimal, if they occur at all.

Road and Trail Maintenance. Land-based components of the program (e.g., road and trail maintenance) are not expected to result in significant impacts on the tidewater goby or their habitat because the Program would implement BMPs EC-1 through EC-14, SC-1 through SC-6, GEN-5 through GEN-16, and GEN-22 to prevent the runoff and discharge of pollutants from land-based activities to aquatic features.

Marina Maintenance. No marina maintenance activities are proposed or expected to occur in areas providing suitable habitat for the tidewater goby.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the tidewater goby and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/ Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control

- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on the tidewater goby and its habitat so that impacts are **less than significant**.

BIO-1J: California Red-legged Frog and California Tiger Salamander (Less than Significant with Mitigation)

The California red-legged frog, federally listed as threatened, is found primarily in or adjacent to creeks and reservoirs west of the mountain ridges in the less urbanized portions of the program area. It is known to occur, or potentially occur, at numerous sites throughout the western portion of San Mateo County, including 75 of 81 sites where maintenance has been recently performed or where maintenance is likely to be necessary in the next 5 to 10 years (see Tables B-1 and B-2 in Appendix A). Southernmost San Mateo County represents the northern most limit of the California tiger salamander's range on the San Francisco Peninsula. The California tiger salamander, federally and state listed as threatened, is known to occur, or potentially occurs, at only one anticipated routine maintenance site (i.e., near Alpine trail) that either has been maintained by the County in recent years or would likely require maintenance in the next 5 to 10 years. The California red-legged frog and California tiger salamander were assessed together because the types of potential impacts of the Program on them would be similar, although potential impacts on the California tiger salamander would be much more limited due to this species' much more limited distribution and abundance within the program area.

Creek Bank Stabilization. Creek bank stabilization activities have been required, or are projected to be required, at nine locations where the red-legged frog may be present. Although no bank stabilization activities have occurred or are projected to occur where the tiger salamander has the potential to occur, because such activities take place on an as-needed basis, bank stabilization may occur at additional maintenance sites where either of these two species have the potential to occur. However, unlike the red-legged frog, tiger salamanders are not expected to breed in habitats where bank stabilization activities would occur.

In the absence of BMPs, potential impacts on the red-legged frog and tiger salamander as a result of bank stabilization activities include injury or mortality of individuals by equipment, vehicle traffic, and worker foot traffic. Adults of both species often use existing animal burrows as refugia. Thus, individuals may also be crushed in their burrows by the passage of heavy equipment or trapped and suffocated. In addition, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals at any life stage. Equipment and boots of maintenance personnel could introduce or spread Bd, a pathogen that can result in impairment of health, and even mortality, of amphibians. Seasonal movements (i.e., breeding, aestivation) and/or daily movements of adult red-legged frogs or tiger salamanders may be temporarily affected during maintenance activities because of dewatering or disturbance of non-instream habitat. Maintenance activities may also result in the temporary loss of habitat value within the maintenance area (e.g., due to physical prevention of red-legged frogs and/or tiger salamanders from reaching an area).

Substrate vibrations or seismic sounds may cause individual adult red-legged frogs or tiger salamanders to move out of refugia, exposing them to a greater risk of predation or desiccation, and may interfere with predator detection, resulting in a decrease in time spent foraging. Additionally, increases in human concentration and activity near suitable habitat may result in an increase in native and non-native predators that are attracted to trash left in the activity area. For example, raccoons (*Procyon lotor*), American crows (*Corvus brachyrhynchos*), and common ravens (*Corvus corax*) are attracted to trash and prey opportunistically on amphibians.

Bank stabilization activities, including those that require dewatering and those that do not, may temporarily result in increased turbidity within and downstream from the footprint of the activities due to mobilization of fine sediments. Increased turbidity may impair the health of red-legged frog eggs or larvae, and make predator and prey detection more difficult. In addition, disturbance of emergent vegetation could result in impacts on red-legged frog egg masses.

Further, any replacement of natural banks, or banks that are armored but that provide numerous refugia for red-legged frogs, tiger salamanders, or their prey, with banks that provide no such refugia (e.g., concrete crib walls or sacked concrete), could result in the loss of upland refugia in the form of crevices, cavities, or small mammal burrows. Such effects could also result in the displacement of invertebrates that serve as a food source for red-legged frogs and tiger salamanders. Replacement of natural banks with hardened banks would also preclude the re-establishment of riparian vegetation that provides cover and food for red-legged frogs, tiger salamanders, and their prey. Conversely, replacement of "hard" bank substrates with "softer" substrates, which could also potentially occur under the Program, would enhance habitat by increasing the availability of riparian vegetation and small mammal burrows to red-legged frogs and tiger salamanders.

Implementation of BMPs would help to avoid and minimize such impacts on red-legged frogs and tiger salamanders. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would minimize impacts due to erosion and sedimentation, and BMP EC-13 would minimize the potential for habitat loss due to bank stabilization activities by requiring the County to use biotechnical solutions to the extent feasible. Further, BMP-24 would minimize the potential impacts of pathogens such as Bd, and BMPs BIO-1 through BIO-4 would minimize impacts through environmental awareness training of maintenance personnel and implementation of pre-activity surveys and relocation of individual red-legged frogs. Individual California tiger salamanders that are found during pre-activity surveys will be avoided; no injury or mortality of individuals of this species is expected to occur, with implementation of BMPs, and no relocation of individual California tiger salamanders is expected to be necessary for maintenance activities. If suitable habitat for the red-legged frog and/or tiger salamander were determined to exist in or around the work area where maintenance activities are planned to occur, the County would implement the applicable protection measures identified in BMP BIO-3, including, but not limited to, the following:

- No more than 24 hours prior to the date of initial ground disturbance or mowing, a pre-activity survey for the red-legged frog and/or tiger salamander would be conducted by a qualified biologist at the work site. If any individuals or eggs were

found, the qualified biologist would contact the USFWS (and CDFW for the tiger salamander) to determine if moving any of the individuals is appropriate. If the USFWS approves moving California red-legged frogs, the biologist and USFWS would identify a suitable relocation site, and the County would ensure the qualified biologist is given sufficient time to move the animals from the work site before ground disturbance is initiated. Only qualified biologists would capture, handle, and monitor the red-legged frog (and monitor for the tiger salamander). No handling or relocation of individual California tiger salamanders is expected to be necessary for maintenance activities.

- To minimize harassment, injury, death, and harm to individual red-legged frogs and tiger salamanders, one of the following two measures would be implemented:

  - An approved, qualified biologist(s) would be on-site during all activities that may result in take of the red-legged frog or tiger salamander, as determined by the biologist taking into account all information gathered during the desktop audit of the site as well as the preconstruction survey; or

  - Prior to pre-activity surveys, personnel would enclose the work area with an exclusion fence that would remain in place during all maintenance activities to prevent red-legged frogs and/or tiger salamanders from entering the work area. Escape ramps, funnels, or other features that allow animals to exit the work area, but which would prohibit the entry of such animals, would be provided in the exclusion fencing. A qualified biologist would conduct a pre-activity survey of the fence installation area immediately prior to (i.e., the day of) the commencement of installation and would be on-hand to monitor fence installation. The exclusion fencing would be inspected daily by maintenance personnel and maintained for the duration of maintenance implementation.

- To the extent practicable, ground-disturbing activities would be avoided from October through April because that is when red-legged frogs are most likely to be moving through upland areas. When ground-disturbing activities must take place between November 1 and March 31, the County would ensure that daily monitoring by the qualified biologist is conducted.

- If a red-legged frog or tiger salamander were encountered in the work area, all activities with the potential to result in the harassment, injury, or death of the individual would be immediately halted. The qualified biologist would then assess the situation in order to select a course of action that would avoid or minimize adverse impacts on the animal. To the maximum extent possible, contact with the frog would be avoided and the individual would be allowed to move out of the potentially hazardous situation to a secure location on its own volition. No relocation of individual California tiger salamanders is expected to be necessary for maintenance activities.

- Red-legged frogs that are in danger would be relocated and released by the qualified biologist outside the work area within the same riparian area or watershed. If relocation of the individual outside the work area is not feasible (i.e., there are too many individuals observed per day), the biologist would relocate the animals to a USFWS preapproved location.

- To the maximum extent practicable, no maintenance activities would occur during rain events or within 24-hours following a rain event.

- Because dusk and dawn are often the times when the red-legged frog is most actively moving and foraging, to the maximum extent practicable, earthmoving and other project activities would cease no less than 30 minutes before sunset and would not begin again prior to 30 minutes after sunrise.

Individual red-legged frogs that are found during pre-activity surveys and relocated to suitable habitat outside of the activity area may be subjected to physiological stress and greater risk of predation. However, the benefits of such relocation, in terms of avoiding direct injury or mortality, would far outweigh any adverse effects, so that no significant impacts on the species are expected due to relocation of red-legged frogs from the impact area.

*Culvert, Storm Drainage, Channel, Bridge, Roadside Ditches, and GI Maintenance. I*n the program area, repair and maintenance activities have been required, or are projected to be required, at over 75 locations where the California red-legged frog has the potential to occur. However, maintenance activities are projected at only one location where the tiger salamander has the potential to occur. Further, unlike the red-legged frog, tiger salamanders are not expected to breed in areas where culvert maintenance activities would occur.

Similar to the potential impacts of bank stabilization activities described above, potential impacts of culvert, storm drainage, channel, bridge, roadside ditch, and GI repair and maintenance activities (in the absence of BMPs), such as sediment removal, include injury or mortality of adult red-legged frogs and tiger salamanders by equipment, vehicle traffic, and worker foot traffic; exposure to petrochemicals, hydraulic fluids, and solvents; spread of pathogens such as Bd; disruption of daily or seasonal movements; loss of vegetative cover; disruption of foraging as a result of vibrations or seismic sounds; and exposure to increased numbers of predators. In addition, increased turbidity may impair the health of red-legged frog eggs or larvae, and make predator and prey detection more difficult, and disturbance of emergent vegetation could result in damage of red-legged frog egg masses. Further, red-legged frogs that are found during pre-activity surveys and relocated to suitable habitat outside the activity area may be subjected to physiological stress and greater risk of predation. Implementation of a number of BMPs, described above, would avoid or minimize such impacts on red-legged frogs and tiger salamanders.

Vegetation Management. Similar to the potential impacts of bank stabilization activities described above, potential impacts of vegetation management activities on red-legged frogs and tiger salamanders (in the absence of BMPs) include mortality of individuals due to crushing by equipment, vehicle traffic and worker foot traffic; exposure to petrochemicals, hydraulic fluids, and solvents; spread of pathogens such as Bd; disruption of daily or seasonal movements; disruption of foraging as a result of vibrations or seismic sounds; and exposure to increased numbers of predators. In addition, the removal of vegetation on stream banks (e.g., tree removal, fuel management) may result in a short-term increase in erosion and sedimentation. Increased turbidity due to erosion and sedimentation may impair the health of red-legged frog eggs or larvae, and the disturbance of emergent vegetation could damage red-legged frog egg masses. In the absence of BMPs, burning vegetation debris could potentially result in impacts to frogs or salamanders that may have sought refuge within burn piles. Implementation of BMP BIO-23 for burn piles would minimize such impacts.

Further, red-legged frogs that are found during pre-activity surveys and relocated to suitable habitat outside of the activity area may be subjected to physiological stress and greater risk of predation. Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts on red-legged frogs and tiger salamanders.

Proposed vegetation management activities also include the application of herbicides. If the County were to use herbicides that were not approved for aquatic use, or that were used improperly in aquatic habitats or in areas where herbicides could wash into aquatic habitats, these herbicides would have the potential to result in adverse effects on red-legged frogs and tiger salamanders as a direct effect on the survival, reproduction, and growth of individuals, as well as indirect effects, such as a reduction in the availability of food items (e.g., invertebrates) and in the suitability of habitat (e.g., reduction in abundance of aquatic and terrestrial plants). However, all herbicide application would be conducted in accordance with the Agricultural Commissioner's recommendations, USEPA guidelines and court issued Stipulated Injunctions, California Department of Pesticide Regulation guidelines, and in accordance with label directions. More specifically and as stated in BMP BIO-3, herbicides would be limited to controlling non-native state-designated invasive species and noxious weeds, and would not be used within 15 feet of aquatic features within non-critical habitat for red-legged frog. Collectively, the use of appropriate herbicides approved for aquatic environments and adherence to state and federal regulations would minimize any adverse effect of herbicide application on red-legged frogs and tiger salamanders.

Road and Trail Maintenance. Similar to the potential effects of vegetation management activities described above, potential impacts of road and trail maintenance activities on red-legged frogs and tiger salamanders (in the absence of BMPs) include mortality of individuals due to crushing by equipment, vehicle traffic and worker foot traffic; exposure to petrochemicals, hydraulic fluids, and solvents; disruption of daily or seasonal movements; disruption of foraging as a result of vibrations or seismic sounds; and exposure to increased numbers of predators. In addition, red-legged frogs or tiger salamanders that are found during pre-activity surveys and relocated to suitable habitat outside of the activity area may be subjected to physiological stress and greater risk of predation. In addition, any slide repair that results in the replacement of natural banks, or banks that are armored but that provide numerous refugia for red-legged frogs, tiger salamanders, or their prey, with banks that provide no such refugia (e.g., concrete crib walls or sacked concrete) could result in the loss of upland refugia in the form of crevices, cavities, or small mammal burrows. Implementation of a number of BMPs, as described above, would avoid or minimize such impacts on red-legged frogs and tiger salamanders.

Marina Maintenance. Because no suitable habitat for the California red-legged frog or California tiger salamander is present where marina maintenance activities would occur, these activities would not result in impacts on the red-legged frog, tiger salamander, or their habitat.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the California red-legged frog, California tiger salamander, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training

- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP BIO-3: California Red-legged Frog Protection Measures
- BMP BIO-4: California Tiger Salamander Protection Measures
- BMP BIO-23: Burn Piles
- BMP BIO-24: Pathogen Control
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on the California red-legged frog, California tiger salamander, and their habitat, and mitigation for short-term loss of habitat is not warranted. However, residual impacts would remain because complete avoidance of long-term impacts on habitat for these species may not be feasible. Because of the regional rarity of the California red-legged frog and California tiger salamander, the extent of potential impacts to California red-legged frog habitat (due to the species' broad distribution in the program area), and the importance of California tiger salamander habitat at the very northern edge of the species' San Mateo County range, any long-term loss of these species' habitat would be considered significant (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance"). Implementation of Mitigation Measure BIO-4 would reduce impacts on the California red-legged frog and California tiger salamander to less-than-significant levels by enhancing, managing, and protecting habitat for these species so as to protect their populations, thereby ensuring that the Program does not substantially reduce the number or restrict the range of these special-status species, have a substantial adverse effect on these species, or impede the use of their nursery sites. Implementation of this

mitigation measure would ensure impacts to California red-legged frog and California tiger salamander are **less than significant with mitigation**.

Mitigation Measure BIO-4: Provide Compensatory Mitigation for the California Red-Legged Frog and California Tiger Salamander

The County will compensate for the long-term loss of habitat for the California red-legged frog and/or California tiger salamander via the restoration, enhancement, and/or management of suitable habitat on County lands (either existing lands or lands that are acquired); financial contribution to local County based watershed, stewardship, or non-profit organizations that lead or coordinate habitat restoration or watershed improvement projects; or purchase of credits in a USFWS-approved conservation bank. Compensatory mitigation for permanent loss of breeding habitat will be provided at a ratio of up to 3:1 (mitigation:impact). Compensatory mitigation for long-term loss of upland dispersal or refugial habitat will be provided at a ratio of up to 2:1 (mitigation:impact), on an acreage basis. The required mitigation ratio will be negotiated annually with the USFWS (and CDFW for impacts on the California tiger salamander) based on the types and quality of habitat impacted during each year's maintenance activities.

For any mitigation efforts, the County will ensure adequate monitoring to document that the mitigation is operational and successfully providing the functions and valued needed to offset potential program impacts. The County will prepare an HMMP describing the measures that will be taken to manage the property and to monitor the effects of management on the California red-legged frog and California tiger salamander; the HMMP will include, at a minimum, the following:

- a summary of impacts on red-legged frog and/or tiger salamander habitat and populations, and the proposed mitigation;
- a description of the location and boundaries of the mitigation site and description of existing site conditions;
- a description of measures to be undertaken, if necessary, to enhance (e.g., through focused management) the mitigation site for red-legged frogs and/or tiger salamander;
- proposed management activities, such as managed grazing, management of invasive plants, measures targeted at sustaining populations of burrowing mammals, or other measures to maintain high-quality habitat for red-legged frogs and/or tiger salamanders;
- a description of species monitoring measures on the mitigation site, including specific, objective goals and objectives, performance indicators, success criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. Determining specific performance/success criteria requires information regarding the specific mitigation site, its conditions, and the specific enhancement and management measures tailored to the mitigation site and its conditions.

- a description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria; and

- a description of the funding mechanism for the long-term maintenance and monitoring of the mitigation lands.

Determining specific performance/success criteria for this mitigation requires information regarding the specific mitigation site, its conditions, and the specific enhancement and management measures tailored to the mitigation site and its conditions. For example, performance criteria for a mitigation site providing only upland habitat for California red-legged frogs would include the maintenance of grassland habitat of a suitable height and density for use by dispersing frogs, whereas a mitigation site providing red-legged frog breeding habitat would also include criteria related to adequate depth and hydroperiod of breeding habitat and suitable vegetative cover. As a result, those specific criteria will be defined in the HMMP rather than in this DEIR. Nevertheless, the performance/success criteria described in the HMMP will include, at a minimum, the maintenance of suitable habitat conditions for the species for which mitigation is being provided. Those criteria will guide the mitigation to manage and protect high-quality habitat for the California red-legged frog and California tiger salamander, adequate to compensate for impacts.

For County-led mitigation projects, the County will be responsible to monitor such projects for a period of 3 to 5 years depending upon the type of mitigation project. For watershed partnering mitigation projects in which the County serves as a partner funding the mitigation through an agency such as the San Mateo Resource Conservation District (RCD), it is anticipated that the local partner (RCD) will monitor and provide reporting on the site for a period of 3 to 5 years. While it is the watershed partner's responsibility to monitor site conditions, it will be the County's responsibility to communicate monitoring results annually as part of the County Maintenance Program's reporting process.

After mitigation has been provided for impacts on a specific area supporting the California red-legged frog and California tiger salamander from a specific year's activities, future (i.e., repetitive) impacts on that area will not require additional mitigation.

BIO-1K: San Francisco Garter Snake (Less than Significant with Mitigation)

The San Francisco garter snake, federally and state listed as endangered and state fully protected, could potentially occur at a limited number of routine maintenance sites in the western portion of San Mateo County.

Creek Bank Stabilization. Many of the potential impacts on the San Francisco garter snake are similar to those described for the California red-legged frog, though due to the much more limited distribution and abundance of the San Francisco garter snake, impacts on the snake would be of much lower likelihood and magnitude than impacts on the red-legged frog. For example, in the absence of BMPs, injury or mortality of individuals by equipment, vehicle traffic, and worker foot traffic may occur. In addition, San Francisco garter snakes often use existing animal burrows as hibernation sites during the winter. Thus, individuals may be crushed in their burrows by the passage of heavy equipment or trapped and suffocated. Daily movements of individuals through their home range may be temporarily affected during maintenance activities because of dewatering or disturbance of non-instream habitat. Additionally, substrate vibrations or seismic sounds caused by maintenance activities may

cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation, and may interfere with predator detection, resulting in a decrease in time spent foraging. Further, program impacts on California red-legged frogs and other prey species of the San Francisco garter snake would reduce prey availability for the species. For example, replacement of natural banks with hardscape would preclude the re-establishment of riparian vegetation that provides cover and food for both garter snakes and their prey.

Implementation of BMPs would help to avoid and minimize such impacts on San Francisco garter snakes. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would minimize impacts due to erosion and sedimentation. BMP EC-13 minimizes the potential for habitat loss due to bank stabilization activities by requiring the County to use biotechnical solutions to the extent feasible.

Further, BMPs BIO-1, BIO-2, and BIO-5 would be implemented to specifically avoid and minimize impacts on the San Francisco garter snake. If a qualified biologist determines that suitable habitat for the San Francisco garter snake is present in or around the work area, maintenance activities would be conducted from April through October (i.e., the dry season) to the extent feasible to minimize impacts on this semi-aquatic species. In addition, a USFWS and CDFW-approved biologist would conduct a preconstruction survey for San Francisco garter snakes within the work area. Further, an approved biologist would monitor all maintenance activities potentially resulting in harm of San Francisco garter snakes or, prior to the start of activities, would oversee the enclosure of the work area within an exclusion fence to prevent snakes from entering the work area. If a San Francisco garter snake were observed within the maintenance work area at any time, activities that could potentially harm the individual would be stopped immediately, and the USFWS and CDFW will be contacted immediately. Work will not re-commence without written approval from USFWS and CDFW.

*Culvert, Storm Drainage, Channel, Bridge, Roadside Ditches, and GI Maintenance. I*n the absence of BMPs, potential impacts on the San Francisco garter snake due to culvert, storm drainage, channel, bridge, roadside ditch, and GI maintenance activities would be similar to those described above for the California red-legged frog and California tiger salamander (though of much lower likelihood and magnitude than for the California red-legged frog, due to the much more limited distribution and abundance of the garter snake). Implementation of a number of BMPs, as described under bank stabilization above, would avoid or minimize such impacts on San Francisco garter snakes.

Vegetation Management. In the absence of BMPs, potential impacts on the San Francisco garter snake due to vegetation management activities would be similar to those described above for the California red-legged frog and California tiger salamander (though of much lower likelihood and magnitude than for the California red-legged frog). Implementation of a number of BMPs, as described under bank stabilization above, as well as BMP-23 to minimize the potential for impacts from burn piles, would avoid or minimize such impacts on San Francisco garter snakes.

Road and Trail Maintenance. In the absence of BMPs, potential impacts on the San Francisco garter snake due to road and trail maintenance activities would be similar to those described above for the California red-legged frog and California tiger salamander (though of much

lower likelihood and magnitude than for the California red-legged frog). Implementation of a number of BMPs, as described under bank stabilization above, would avoid or minimize such impacts on San Francisco garter snakes.

Marina Maintenance. Because no suitable habitat for the San Francisco garter snake is present in areas where marina maintenance activities would occur, these maintenance activities would not result in impacts on the San Francisco garter snake or its habitat.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the San Francisco garter snake and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP BIO-5: San Francisco Garter Snake Protection
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMP EC-13: Slope or Bank Stabilization
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of these BMPs would reduce impacts on the San Francisco garter snake and its habitat, and mitigation for short-term loss of habitat is not warranted. However, residual impacts would remain because complete avoidance of long-term impacts on habitat for this species may not be feasible. Because of the regional rarity of the San Francisco garter snake, any long-term loss of habitat would be considered significant (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance"). Implementation of Mitigation Measure BIO-5 would reduce the impact on the San Francisco garter snake by enhancing, managing, and protecting habitat for this species so as to protect their populations. Implementation of Mitigation Measure BIO-5 would thereby ensure that the proposed program does not substantially reduce the number or restrict the range of this special-status species, have a substantial significant impacts on this species, or impede the use of its nursery sites. This impact would be **less than significant with mitigation**.

Mitigation Measure BIO-5: Provide Compensatory Mitigation for the San Francisco Garter Snake

The County will compensate for the long-term loss of habitat for the San Francisco garter snake via the restoration, enhancement, and/or management of suitable habitat on County lands (either existing lands or lands that are acquired); financial contribution to local County based watershed, stewardship, or non-profit organizations that lead or coordinate habitat restoration or watershed improvement projects; or purchase of credits in a USFWS-approved conservation bank. Compensatory mitigation for permanent loss of breeding habitat will be provided at a ratio of up to 3:1 (mitigation:impact), and compensatory mitigation for long-term loss of upland dispersal or refugial habitat will be provided at a ratio of up to 2:1 (mitigation:impact), on an acreage basis. The required mitigation ratio will be negotiated annually with the USFWS and CDFW, based on the types and quality of habitat impacted during each year's maintenance activities.

For any mitigation efforts, the County will ensure adequate monitoring to document that the mitigation is operational and successfully providing the functions and valued needed to offset potential Maintenance Program impacts. The County will develop an HMMP, which will include components similar to those described for the California red-legged frog and California tiger salamander in Mitigation Measure BIO-4.

For County-led on-site and off-site mitigation projects, the County will be responsible to monitor such projects for a period of 3 to 5 years depending upon the type of mitigation project. For watershed partnering mitigation projects in which the County serves as a partner funding the mitigation through an agency such as the RCD, it is anticipated that the local partner (RCD) will monitor and provide reporting on the site for a period of 3 to 5 years. While it is the watershed partner's responsibility to monitor site conditions, it will be the County's responsibility to communicate monitoring results annually as part of the County Maintenance Program's reporting process.

After mitigation has been provided for impacts on a specific area supporting the San Francisco garter snake from a specific year's activities, future (i.e., repetitive) impacts on that area will not require additional mitigation.

BIO-1L: Foothill Yellow-Legged Frog (Less than Significant)

The foothill yellow-legged frog, state listed as endangered, is typically found in partially shaded shallow streams and riffles with a rocky substrate. Suitable habitat for the foothill yellow-legged frog is present in the program area along Coastside streams in the Santa Cruz Mountains. However, the species is known from only a single location in the program area, and if it occurs in the program area at all, it is very scarce.

Culvert, Storm Drainage, Channel, Bridge, *and* Roadside Ditches and GI Maintenance; Vegetation Management; and Road and Trail Maintenance. Like the California red-legged frog discussed under Impact BIO-J, the foothill yellow-legged frog is associated with aquatic habitats. The potential program impacts and the mechanisms by which these impacts could occur would be very similar to those described for the California red-legged frog. Thus, these impacts are not repeated here. However, the foothill yellow-legged frog's distribution in the program area is much more limited than that of the red-legged frog. There is only one recorded occurrence of the species in San Mateo County in recent history, in 1999 at Pescadero Creek County Park (CNDDB 2019). Thus, the species is likely rare in the program area, if it still occurs at all. Also, the foothill yellow-legged frog is more closely tied to aquatic habitats and their immediate environs than the California red-legged frog, which makes greater use of upland habitats for dispersal and refugia. As a result, Program impacts on upland habitats well away from streams are not expected to impact foothill yellow-legged frogs or their habitats.

Implementation of BMPs would help to avoid and minimize such impacts on foothill yellow-legged frogs. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would minimize impacts due to erosion and sedimentation, and BMP EC-13 would minimize the potential for habitat loss due to bank stabilization activities by requiring the County to use biotechnical solutions to the extent feasible. Further, BMPs BIO-1, BIO-2, and BIO-6 would minimize impacts through environmental awareness training of maintenance personnel and implementation of pre-activity surveys, non-disturbance buffer zones, and relocation of individuals that cannot be avoided, and BMP-24 would minimize the potential impacts of pathogens such as Bd.

Marina Maintenance. Because no suitable habitat for the foothill yellow-legged frog is present in areas where marina maintenance activities would occur, these maintenance activities would not result in impacts on the foothill yellow-legged frog or its habitat.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the foothill yellow-legged frog and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP BIO-6: Measures to Protect the Foothill Yellow-legged Frog, California Giant Salamander, Santa Cruz black Salamander, and Western Pond Turtle

- BMP BIO-24: Pathogen Control
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMP EC-13: Slope or Bank Stabilization
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on individual foothill yellow-legged frogs and their habitats considerably, if the species occurs in areas where program activities will be performed. Impacts would occur in such limited areas in which the species could be present, thus affecting such a low number of individuals that implementing these BMPs would be adequate to assure impacts would be **less than significant**.

Although no mitigation would be needed to reduce the impact on foothill yellow-legged frogs to a less-than-significant level, mitigation measures for other impacts may benefit this species. As discussed under Impacts BIO-2 and BIO-3, Mitigation Measures BIO-8 and BIO-9 would require the County to provide compensatory mitigation for impacts on wetland, aquatic, and riparian habitats. This mitigation may take a variety of forms, and not all such mitigation would occur in areas that would directly benefit the foothill yellow-legged frog. However, Mitigation Measures BIO-8 and BIO-9 would result in wetland, aquatic, and riparian habitat restoration, enhancement, and protection, which would benefit the foothill yellow-legged frog if these mitigation measures occur in areas that overlap the species' current range.

BIO-1M: California Giant Salamander and Santa Cruz Black Salamander (Less than Significant)

In the program area, the California giant salamander and Santa Cruz black salamander, both California species of special concern, are found in the Santa Cruz Mountains and foothills, typically in moist forests and riparian zones in or near streams or seeps. These species were assessed together because the potential impacts of the Program on them would be similar.

*Culvert, Storm Drainage, Channel, Bridge, and Roadside Ditches and GI Maintenance; and Road and Trail Maintenance. Li*ke the California red-legged frog discussed under Impact BIO-J, the California giant salamander and Santa Cruz black salamander are associated with aquatic and riparian habitats in the program area, and the potential Program impacts on these species and the mechanisms by which they could occur would be very similar to those described for the California red-legged frog. Thus, these impacts are not repeated here.

Implementation of BMPs would help to avoid and minimize impacts on California giant salamanders and Santa Cruz black salamanders. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1,2 3, 5, 6, 7, 9, 10, 12,13,14,15, 16, 21, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would minimize impacts due to erosion and sedimentation, and BMP EC-13 would minimize the potential for habitat loss due to bank stabilization activities by requiring the County to use biotechnical solutions to the extent feasible. Further, BMPs BIO-1 and BIO-6 would minimize impacts through environmental awareness training of maintenance personnel and implementation of pre-activity surveys, non-disturbance buffer zones, and relocation of individuals that cannot be avoided.

Marina Maintenance. Because no habitat suitable for the California giant salamander or Santa Cruz black salamander is present in areas where marina maintenance activities would occur, these maintenance activities would not result in impacts on these species or their habitat.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the California giant salamander and Santa Cruz black salamander and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP BIO-6: Measures to Protect the Foothill Yellow-legged Frog, California Giant Salamander, Santa Cruz Black Salamander, and Western Pond Turtle
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal

- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-13: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on individual California giant salamanders and Santa Cruz black salamanders and their habitats considerably. Impacts would occur in such limited areas in which the species could be present, thus affecting such a low number of individuals that implementing these BMPs would be adequate to assure impacts would be **less than significant**.

Although no mitigation would be needed to reduce the impact on California giant salamanders and Santa Cruz black salamanders to a less-than-significant level, mitigation measures for other impacts may benefit these species. As discussed under Impacts BIO-2 and BIO-3, Mitigation Measures BIO-8 and BIO-9 would require the County to provide compensatory mitigation for impacts on wetland, aquatic, and riparian habitats. This mitigation may take a variety of forms, and not all such mitigation would occur in areas that would directly benefit the California giant salamander and Santa Cruz black salamander. However, Mitigation Measures BIO-8 and BIO-9 would result in wetland, aquatic, and riparian habitat restoration, enhancement, and protection, which would benefit them if these mitigation measures occur in areas that overlap with the species' current ranges.

BIO-1N: Western Pond Turtle (Less than Significant with Mitigation)

Creeks, lakes, ponds, and freshwater marshes in the program area provide suitable habitat for the western pond turtle, a California species of special concern. However, records of the species are limited in the program area are limited. The species has been recorded in San Mateo, Butano, Alpine, and San Francisquito Creeks, ponds in La Honda Open Space Preserve, and several locations along the shores of Crystal Springs Reservoir (CNDDB 2019), suggesting that this species is scarce and fairly locally distributed in the program area.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, *and* Roadside Ditches and GI Maintenance; Vegetation Management; and Road and Trail Maintenance. Similar to the California red-legged frog impact discussion above, in the absence of BMPs, proposed program activities may result in the injury or mortality of turtles. For example, individual

turtles or their eggs may be directly harmed or killed during maintenance activities from crushing by construction personnel or equipment or as a result of desiccation or burying during bank stabilization, sediment removal or vegetation management activities. In addition, riparian and upland areas that provide nesting habitat, dispersal habitat, and refugia for western pond turtles may be temporarily or permanently lost during bank stabilization activities and the construction of temporary stream access routes. Activities requiring dewatering also would result in a temporary loss of aquatic habitat. Vegetation management may reduce instream habitat structure, including basking areas; vegetation that provides concealment from predators; and habitat that supports turtle prey.

Implementation of BMPs would help to avoid and minimize such impacts on western pond turtles. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would minimize impacts due to erosion and sedimentation, and BMP EC-13 would minimize the potential for habitat loss due to bank stabilization activities by requiring the County to use biotechnical solutions to the extent feasible. Further, BMPs BIO-1 and BIO-6 would minimize impacts through environmental awareness training of maintenance personnel and implementation of pre-activity surveys, non-disturbance buffer zones, and relocation of individuals that cannot be avoided.

Marina Maintenance. Because no habitat suitable for the western pond turtle is present in areas where marina maintenance activities would occur, these activities would not result in impacts on the western pond turtle or its habitat.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the western pond turtle and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-2: Minimize Injury or Mortality of Fish and Amphibian Species during Dewatering
- BMP BIO-6: Measures to Protect the Foothill Yellow-legged Frog, California Giant Salamander, Santa Cruz black Salamander, and Western Pond Turtle
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application

- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-13: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on western pond turtles and their habitats. However, residual impacts would remain because it would not be feasible to avoid all individuals (particularly nests with eggs) and habitat loss while still meeting project goals and public health and safety directives. Suitable habitat for the western pond turtle is widespread in the program area; however, records of the species are limited (CNDDB 2019). The cumulative stressors of urbanization including the release of non-native turtles, predation and harassment by pets and non-native mammals, capture by humans, degradation of water quality, loss of upland nesting habitat due to development, and the construction of barriers between creeks and nesting areas have reduced western pond turtle populations, and pond turtle numbers are expected to be low in the program area. Therefore, the loss of individuals or of important aquatic or upland habitat could reduce the viability of a population to the extent that it would be extirpated, a significant impact (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance").

As discussed under Impacts BIO-2 and BIO-3, **Mitigation Measures BIO-8 and BIO-9** would require the County to provide compensatory mitigation for impacts on wetland, aquatic, and woody riparian habitats. This mitigation may take a variety of forms, but all mitigation for impacts on those habitats could benefit western pond turtle upland or aquatic habitat, directly or indirectly. Mitigation Measures BIO-8 and BIO-9 would result in benefits to this species through wetland, aquatic, and riparian habitat restoration, enhancement, and protection. These measures would help to maintain water quality, cover, and instream habitat complexity while protecting upland refugia and nesting habitat. Implementation of Mitigation Measures BIO-8 and BIO-9 would reduce the impact on the western pond turtle to a level that is **less than significant with mitigation**.

BIO-1O: Marbled Murrelet (Less than Significant)

The marbled murrelet, federally listed at threatened and state listed as endangered, nests in old growth forests on the coast side of the program area.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, *and* Roadside Ditches and GI Maintenance; Vegetation Management; and Road and Trail Maintenance. Suitable nesting habitat for the marbled murrelet is present at several of the identified routine maintenance sites identified in the Manual (Appendix A), such as at Memorial, Sam McDonald, and Pescadero Creek County Parks. A number of maintenance activities, such as maintenance of roads and trails, culverts, and bridges, as well as vegetation management and other activities,

are proposed in these areas. Program activities are not expected to result in the loss of nesting habitat. However, in the absence of BMPs it is feasible that such activities could occur sufficiently close to active nests to result in disturbance. Adult birds are not expected to be killed or injured, as they could easily fly from the work site prior to such effects occurring. However, program activities causing a substantial increase in noise, movement of equipment, or human presence near active nests could result in the abandonment of nests, and possibly the loss of eggs or young as a result.

Implementation of a number of BMPs would help to avoid and minimize impacts on nesting marbled murrelets. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging and stockpiling of materials, and other adverse effects, include BMPs GEN-1 and GEN-2. More importantly, BMPs BIO-1 and BIO-10 would be implemented to specifically avoid and minimize impacts on the marbled murrelet. Maintenance activities within 0.25 mile of suitable nesting habitat for the marbled murrelet, as determined by a qualified biologist, would be confined to the period of September 16 to March 24, outside of the typical nesting season for marbled murrelets (as defined by the Pacific Seabird Group Marbled Murrelet Technical Committee [2003]).

Marina Maintenance. Because no habitat suitable for the marbled murrelet is present where marina maintenance activities would occur, these maintenance activities would not result in impacts on the marbled murrelet or its habitat.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the marbled murrelet and its habitat. A description of each BMP is provided in Table 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-10: Measures to Protect Nesting Marbled Murrelet

Conclusion

Implementation of BMPs would reduce impacts on the marbled murrelet and its habitat so that impacts are **less than significant**.

BIO-1P: Western Snowy Plover (Less than Significant)

The western snowy plover, federally listed as threatened and a California species of special concern, is restricted primarily to the coast and the South San Francisco Bay within the program area. Along the San Mateo County coast, this species is a scarce breeder on beaches, occurring more regularly and in greater numbers as a nonbreeder (Cornell Lab of Ornithology). Along the Bay, the species breeds only in managed ponds in the East Palo Alto/Menlo Park area, outside of the program area, but non-breeding individuals may occasionally occur in the program area at the Coyote Point Restoration Area.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. No program activities are currently proposed to occur within or near areas where the western snowy plover has recently nested, or close enough to regularly used foraging habitat to result in

regular disturbance of foraging individuals. Furthermore, no regularly used or high-quality foraging habitat would be impacted by currently proposed program activities.

However, this species occurs regularly as a nonbreeder at Tunitas Creek Beach and could potentially nest there given the presence of suitable nesting habitat. Proposed activities at Tunitas Creek Beach are generally located in upland areas inland from the beach, but if activities such as trail maintenance or vegetation management were to occur close enough to the beach, it is possible that these activities could disturb plovers on the beach. If the plovers were just foraging (e.g., nonbreeding, wintering birds), they might be temporarily displaced during maintenance activities, though such impacts would be of short duration and would not hinder longer-term use of that habitat. However, in the event that snowy plovers were to nest on the upper beach or in the dunes, or to take young into the dunes, maintenance activities would occur in closer proximity to the breeding plovers. Disturbance of breeding plovers could potentially cause adults to leave the nest or chicks, possibly resulting in nest abandonment or an increased risk of predation of eggs or chicks, or cause chicks to move into areas where they are at greater risk of predation.

Implementation of a number of BMPs would help to avoid and minimize impacts on nesting snowy plovers. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging and stockpiling of materials, and other adverse effects, include BMPs GEN-1 and GEN-2. More importantly, BMP BIO-1 and BIO-22 would be implemented to specifically avoid and minimize impacts on nesting snowy plovers. If maintenance will occur within 600 feet of potential snowy plover breeding habitat during the breeding season (March 1 through September 14), pre-activity surveys will be conducted, and a buffer will be maintained between maintenance activities and any active plover nest or brood of unfledged plover chicks.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the western snowy plover and its habitat. A description of each BMP is provided in Table 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-22: Measures to Protect Nesting Western Snowy Plover
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel

- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on the western snowy plover and its habitat so that impacts are **less than significant**.

BIO-1Q: California Ridgway's Rail (Less than Significant)

Within the program area, suitable marsh habitat for the California Ridgway's rail, federal and state listed as endangered and a state fully protected species, is found only along the shoreline of San Francisco Bay near the San Francisco International Airport. Even there, habitat is very limited, and it is of low quality due to its narrow, fragmented nature. Ridgway's rails were previously known to breed near the mouth of Colma Creek in the program area (CNDDB 2019, Horizon Water and Environment 2015, Invasive Spartina Project 2008), prior to the onset of the Invasive Spartina Program. However, following the onset of *Spartina c*ontrol, numbers of rails detected in the area declined, and surveys in 2012-2013 did not detect the species. In addition, Horizon Water and Environment (2015) concluded that there was no suitable habitat present in the area in 2015. Although it is possible that Ridgway's rails could return to the area if suitable habitat re-establishes, in 2017 the USFWS considered the Ridgway's rail absent from Colma Creek (based on survey data from the Invasive Spartina Project 2016 annual rail monitoring program and recent CNDDB queries) (USFWS 2017), and no Ridgway's rails were detected during a protocol-level survey conducted by BioMaAS, Inc. near the mouth of Colma Creek in 2018 (BioMaAS, Inc. 2018). Non-breeding California Ridgway's rails may occasionally occur near a marsh in the extreme southwest corner of the Coyote Point Recreation Area during proposed program activities, although due to the small size and marginally tidal nature of that marsh, use of the marsh by Ridgway's rails would be very infrequent, if the species occurs there at all.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Road and Trail Maintenance; and Marina Maintenance.* California Ridgway's rails that may occasionally forage or roost in the extreme southwest corner of the Coyote Point Recreation Area may be affected by heavy ground disturbance, noise, or vibration caused by any program activities occurring in the vicinity. Ridgway's rails are not expected to nest in this area, and no birds are expected to be killed or injured because they could easily fly from the work site prior to such effects occurring. However, in the absence of BMPs, proposed program activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individual Ridgway's rails, causing them to avoid work sites and possibly exposing them to increased risk of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native

predators that would be attracted to trash left in the work site. These impacts are expected to be temporary, occurring only while the maintenance activity is ongoing. Additionally, increases in sedimentation or hazardous material spills from program activities (e.g., pump-out facility maintenance; herbicide application) may result in the temporary or permanent degradation of water quality and, hence, habitat quality in marsh or aquatic habitats downstream from work sites and could impact Ridgway's rails.

Nesting is not currently known to occur in any program areas. Nevertheless, Ridgway's rails could return to the area near the mouth of Colma Creek if suitable habitat re-establishes in the future. Similarly, it is possible that breeding Ridgway's rails could occur at other Bayside maintenance locations (e.g., near tide gates). Program activities are not expected to result in the physical disturbance of nesting habitat for this species. However, program activities may occur near enough to occupied breeding habitat to be disturbed. This impact is expected to be temporary, occurring only while the maintenance activity is ongoing.

Implementation of BMPs would help to avoid and minimize such impacts on Ridgway's rails. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC- 1 through EC-13 and SC-1 through SC–6 would minimize impacts due to erosion and sedimentation. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species.

Further, BMP BIO-13 would be implemented to specifically avoid and minimize impacts on the California Ridgway's rail. If suitable breeding habitat for California Ridgway's rails is determined to exist in or around the work area where maintenance activities are to occur and if work will occur during the Ridgway's rail breeding season (February 1 through August 31), the County will conduct pre-activity surveys for the Ridgway's rail in the late winter/early spring of the year maintenance activities are scheduled to occur. Surveys would be conducted per the current USFWS protocol. If the surveys confirm there are no breeding rails within 700 feet of the project area, or the area where heavy equipment, ground disturbance, or vegetation removal would occur, work activities may proceed during the breeding season. If surveys identify the presence of breeding rails, no maintenance activities will occur within 700 feet of occupied nesting habitat during the breeding season (February 1 to August 31).

If suitable non-breeding habitat is present within the immediate work area, then prior to the initiation of work each day, a qualified biologist would conduct a preconstruction survey of all suitable habitat that may be directly or indirectly impacted by the day's activities (work area, access routes, staging areas). If during the initial daily survey or during work activities a Ridgway's rail is observed within or immediately adjacent to the work area (50 feet), initiation of work would be delayed until the Ridgway's rail leaves the work area. Additionally, mowing using heavy equipment (e.g., tractors, boom mowers, or rider mowers) would not be conducted in habitat areas or within 50 feet of habitat areas. If mowing with hand equipment were necessary within 50 feet of habitat areas, an on-site monitor would observe the area in front of the mower from a safe vantage point while it is in operation. If Ridgway's rails were detected within the area to be mown, the mowing would stop until the individual(s) left the work area.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the California Ridgway's rail and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-13: Measures to Protect the California Ridgway's Rail
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Program activities would not occur within suitable breeding habitat for the California Ridgway's rail. Further, Ridgway's rails are not expected to breed in or near program areas. Nevertheless, implementation of the BMPs listed above would reduce impacts on breeding and foraging individuals, should they be present, so that the impacts are **less than significant**.

BIO-1R: Bald Eagle and Golden Eagle (Less than Significant)

The golden eagle, a state fully protected species, breeds in a range of open habitats, including scrub, woodlands, and grasslands. In the program area, the golden eagle is an uncommon to rare permanent resident (Cornell Lab of Ornithology 2019). It occurs sparingly in grasslands throughout San Mateo County, primarily as a nonbreeder, although a few pairs nest there (SAS 2001). Ideal habitat for the bald eagle, state listed as endangered and a state fully protected species, is composed of remote, forested landscape with mature trees and easy

access to an extensive and diverse prey base. Bald eagles forage in fresh and salt water where fish are abundant and diverse. In the program area, the bald eagle occurs primarily as a migrant and winter visitor and is rare during the summer months (Cornell Lab of Ornithology 2019). It occurs most often at larger reservoirs, where it forages on fish and waterfowl, but migrants may occur virtually throughout the program area. A pair successfully nested at Crystal Springs Reservoir in 2013, 2014, and 2015 and there are rumors of possible nesting by what was likely the same pair nearby in subsequent years. Given recent increases in breeding populations along the central California coast, additional breeding pairs may colonize other lakes and reservoirs in the near future. Impacts on the golden eagle and bald eagle are analyzed together herein because impacts due to the proposed program would be similar for both species.

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance.* The proposed program would not result in the loss of currently known active nesting sites or suitable nesting trees for eagles. However, it is feasible that a pair of bald or golden eagles could initiate a new nest within a Program activity area in the next 5 to 10 years. In the absence of BMPs, program activities occurring in close proximity to an active nest during the breeding season could result in abandonment of the nest, or at least abandonment of eggs or young that were in the nest at the time.

Bald eagle populations have been increasing and there is no evidence that golden eagle populations in San Mateo County are particularly threatened or declining. However, in the absence of BMPs, the loss of eggs or young would represent the loss of a large proportion of these species' South Bay-wide breeding effort. In addition, program activities that remove upland vegetation could result in the loss of foraging habitat for golden eagles, and maintenance activities have the potential to generate noise that may adversely affect foraging eagles. Construction activities may result in a temporary impact on foraging individuals through the alteration of foraging patterns (e.g., avoidance of work areas because of increased noise and activity levels during maintenance activities). Further, increases in erosion and sedimentation of aquatic habitats, or contamination due to the spill of petrochemicals, hydraulic fluids, and solvents may affect the health of bald eagle prey (e.g., fish) within or downstream from the activity area, and fresh concrete may release harmful chemicals into the water if rewatering occurs before the concrete has cured. Due to the relatively small amount of foraging habitat that would be impacted by maintenance activities, the abundance of suitable foraging habitat in the program area, and the temporary nature of most impacts on foraging habitats, Program activities are not expected to result in a substantial impact on foraging habitat or prey for eagles.

Implementation of BMPs would help to avoid and minimize such impacts on bald and golden eagles. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, and 22. BMPs EC- 1 through EC–13 and SC-1 through SC–6 would minimize impacts on aquatic foraging habitat for the bald eagle due to erosion and sedimentation. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of these species. Further, BIO-15 would be implemented to specifically avoid and minimize impacts on the bald and golden eagle through the identification of active nests and implementation of non-disturbance buffers around such nests.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the bald and golden eagle and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP BIO-15: Nesting Bald Eagle and Golden Eagle Avoidance
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would ensure impacts on bald and golden eagles are **less than significant**.

BIO-1S: American Peregrine Falcon

In natural habitats, the American peregrine falcon, a state fully protected species, nests on ledges and in caves on steep cliffs. However, some pairs of this species are highly adapted to the presence of human development, and as a result, this species may nest on and forage from buildings and bridges, and nests built by other species on electrical transmission towers, throughout the program area. American peregrine falcons are known to breed and forage in the program area, but the only known recent breeding location is near the Devil's Slide Coastal Trail.

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance.* Because nesting occurs on cliffs, buildings, and electrical towers, sites that would not be physically disturbed by program-related activities, physical loss of nesting sites would not occur. Furthermore, because peregrine falcons are aerial foragers and adapted to some extent to human activity, the potential for proposed program activities to disturb a nest to the point of abandonment would be very low. However, peregrine falcons possibly could establish new nests over the next 5 to 10 years in areas close enough to program activities that the increased noise and movement of people and heavy equipment in close proximity to an active nest during the breeding season could result in abandonment of the nest, including eggs and young.

Implementation of BMPs would help to avoid and minimize such impacts on American peregrine falcons. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, and 10. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the American peregrine falcon, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the American peregrine falcon and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling

Conclusion

Implementation of these BMPs would reduce impacts on the American peregrine falcon and its habitat so that they are **less than significant**.

BIO-1T: Burrowing Owl (Less than Significant with Mitigation)

The burrowing owl, a California species of special concern, prefers annual and perennial grasslands, typically with sparse or nonexistent tree or shrub canopies. In California, burrowing owls are found in close association with California ground squirrels (*Otospermophilus beecheyi*); owls use abandoned ground squirrel burrows for shelter and nesting. They exhibit strong site fidelity and may use a nesting site year after year. A statewide survey conducted between 1991 and 1993 indicated that breeding owls had nearly been extirpated from San Mateo County with only one to two known breeding pairs remaining (DeSante et al. 2007). Although this species could possibly still breed along the Bay in the Bedwell-Bayfront Park vicinity (SAS 2001, Cornell Lab of Ornithology 2019), outside the program area, this species is expected to occur in the program area only as a fairly rare migrant and winter visitor.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. Program activities may affect migrant and wintering burrowing owls or their habitat. Program activities that result in the temporary or permanent loss of ground squirrel burrows (e.g., re-grading of roads/trails, trenching for culvert replacement/repair, and installation of hardscape for bank stabilization) may result in the degradation of habitat for migrant and wintering burrowing owls. In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact this species' habitat. Due to the relatively small amount of grassland habitat that would be affected relative to the extent of suitable wintering habitat in the region, impacts on habitat for migrant and wintering burrowing owls would be considered less than significant. In addition, because burrowing owls are known to prefer areas with short, sparse vegetation, some vegetation activities (e.g., mowing) may have a beneficial impact on habitat for the species. Implementation of BMPs would help to avoid and minimize such impacts on burrowing owls. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, 10, and 21. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species, and BIO-23 would minimize the potential impacts of fire from burn piles.

However, even after implementation of the abovementioned BMPs, because burrowing owls roost underground, individuals may be crushed in their burrows by the passage of heavy equipment or trapped and suffocated. This would be considered a significant impact.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the burrowing owl and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance

- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-21: Domestic Animals

Conclusion

Burrowing owls are not expected to breed in the program area, and implementation of the BMPs identified above would minimize impacts on habitat for wintering or migrant burrowing owls. However, residual impacts on burrowing owls might occur due to the injury or mortality of individuals in their roost burrows. Loss of individuals resulting from the program might result in a substantial impact on the regional burrowing owl population because this species has experienced substantial regional losses in habitat and populations, and thus the impact would be significant (first significance criterion listed in Section 3.4.3 under "Criteria for Determining Significance"). When occupied habitat must be impacted, **Mitigation Measure BIO-6** would be implemented to reduce the impact on burrowing owls to a level that is **less than significant with mitigation**.

Mitigation Measure BIO-6: Burrowing Owl Pre-Activity Survey and Avoidance

Prior to ground-disturbing program activities in high-quality burrowing owl habitat (i.e., extensive grasslands with abundant ground squirrel burrows, and possibly other habitats such as ruderal habitat or open scrub if determined by a qualified biologist to provide suitable burrowing owl roosting habitat), a focused pre-activity survey will be conducted for burrows occupied by migrant or overwintering burrowing owls. Surveys will be conducted by a qualified biologist (i.e., one who is familiar with burrowing owl ecology and experienced in performing surveys for them) no more than 14 days prior to commencement of ground-disturbing activities. These surveys will be conducted in accordance with the CDFW's 2012 Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012) or any more current equivalent should new guidelines be released before the activity is initiated. Although burrowing owls are not expected to breed in the program area, pre-activity surveys will be conducted year-round due to the potential for dispersing juveniles or failed breeders from South Bay breeding populations (in addition to migrants and wintering birds present during the nonbreeding season) to occupy burrows in the program area during breeding season.

During the initial site visit, which will be conducted no more than 14 days prior to the start of construction, a qualified biologist will survey the activity area and (to the extent that access allows) habitat within 250 feet of the site for burrowing owls and suitable burrowing owl habitat (i.e., ground squirrel burrows). If no burrows suitable for use by burrowing owls are present, no additional surveys will be required. However, if suitable burrows are determined to be present, the qualified biologist will visit the site one additional time to investigate each burrow for signs of owl use and

to determine whether owls are present in areas where they could be affected by the proposed activities. This site visit will take place no more than 24 hours prior to the start of ground disturbing activities.

If an occupied burrow(s) is found, impacts on the burrow will be avoided by the implementation of a construction-free buffer around the occupied burrow. The size of the buffer will be determined by the qualified biologist but will be sufficient to ensure the occupied burrow is not damaged. No ground-disturbing program activities will commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied.

If impacts on occupied burrows are unavoidable, passive relocation techniques will be used to evict owls from burrows within the work area prior to initiation of ground-disturbing activities. No owls will be evicted during the breeding season (February 1 through August 31) unless a biologist can determine that owls are not actively nesting.

BIO-1U: Loggerhead Shrike, Grasshopper Sparrow, and White-Tailed Kite (Less than Significant)

The loggerhead shrike, a California species of special concern, occurs in grassland, ruderal, and marsh communities throughout the program area. However, it occurs primarily as a migrant and wintering visitor along the coastal and San Francisco Bay lowlands and is generally absent from the crest of the Santa Cruz Mountains. It is a rare breeder in the program area. The grasshopper sparrow, a California species of special concern when nesting, breeds in open, short grasslands with scattered clumps of shrubby vegetation, constructing domed ground nests with grasses in patches of dense vegetation. Breeding grasshopper sparrows occur in small numbers in extensive grassland areas throughout much of the program area, but primarily west of and along the Santa Cruz Mountains ridgeline (SAS 2001, Cornell Lab of Ornithology 2019, Unitt 2008). The white-tailed kite, a state fully protected species, breeds more commonly in the program area, occurring in marshes and grasslands that contain suitable brush, shrubs, or trees for nesting. These species are assessed together because they breed and forage in similar habitats in the program area and because the potential effects of the Program on all three species would be similar.

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. Program activities may affect loggerhead shrike, grasshopper sparrow, and white-tailed kite habitat (breeding and foraging) and could possibly impact active nests, including eggs or nestlings. Program activities, particularly vegetation management (e.g., tree removal, mowing, and fuel management) may degrade habitat, as compared to existing conditions, and may maintain habitat in a reduced-quality state so that it supports fewer loggerhead shrikes, grasshopper sparrows, and white-tailed kites over the long term. In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact these species' habitats, and potentially the ground nests of grasshopper sparrows. However, because of the very limited extent of breeding and foraging habitat that would be affected relative to the extent of suitable habitat and prey in the region, impacts on habitat for loggerhead shrikes, grasshopper sparrows, and white-tailed kites would be considered less than significant.

Adult loggerhead shrikes, grasshopper sparrows, and white-tailed kites are not expected to be killed or injured due to program activities because they could easily fly from the work site prior to such effects occurring. However, in the absence of BMPs, eggs or young in nests may be killed or injured as a result of destruction by maintenance personnel or equipment, removal of vegetation containing nests, or impacts on nests from burning. Furthermore, nesting may be disrupted to the extent that nests would fail because of disturbance that was too frequent or too severe. In addition, proposed program activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individual shrikes, grasshopper sparrows, and kites, causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native predators that would be attracted to trash left in the work site. These impacts are expected to be temporary, occurring only while the maintenance activity is ongoing.

Implementation of BMPs would help to avoid and minimize such impacts on the shrike, grasshopper sparrow, and kite. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, 10, and 21. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species, and BIO-23 would minimize the potential impacts of fire from burn piles. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the loggerhead shrike, grasshopper sparrow, and white-tailed kite, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the loggerhead shrike, grasshopper sparrow, white-tailed kite, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling

- BMP GEN-21: Domestic Animals

Conclusion

Implementation of BMPs would reduce impacts on the loggerhead shrike, grasshopper sparrow, white-tailed kite, and their habitats so that they are **less than significant**.

BIO-1V: Northern Harrier, Alameda Song Sparrow, San Francisco Common Yellowthroat, and Bryant's Savannah Sparrow (Less than Significant)

The northern harrier, Alameda song sparrow, San Francisco common yellowthroat, and Bryant's savannah sparrow, all California species of special concern, are assessed together because they occupy similar habitats and the potential effects of the proposed program on these species would be similar.

During the breeding season in the program area, the northern harrier occurs primarily along the coast (in the interior of large expanses of marsh and grassland habitat) and in the tidal marshes of South San Francisco Bay (SAS 2001, Cornell Lab of Ornithology 2019). Prime habitat for the Alameda song sparrow consists of large areas of tidally influenced salt marsh, dominated by cordgrass and gumplant and intersected by tidal sloughs, offering dense vegetative cover and singing perches. In the program area, the Alameda song sparrow occurs only in salt marshes along San Francisco Bay. The San Francisco common yellowthroat inhabits emergent vegetation and breeds in fresh and brackish marshes and moist floodplains that support dense vegetation. This species is a locally common breeder in taller salt, brackish, and freshwater marsh habitat, in moist coastal scrub, and in riparian habitat dominated by willows and herbaceous vegetation. Bryant's savannah sparrow occurs primarily in coastal and bayshore areas. In the program area, it is found year-round in low-elevation, tidally influenced habitat, specifically pickleweed-dominated salt marshes, and in grasslands and ruderal areas. Along the edge of the Bay, levee tops with short vegetative growth and levee banks with high pickleweed are the preferred nesting habitat of this sparrow (Fitton 2008). This species also nests in extensive grasslands in coastal areas and in the interior of the Santa Cruz Mountains (SAS 2001).

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, and Ro*adside Ditches and GI Maintenance; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. Program activities may affect northern harrier, Alameda song sparrow, San Francisco common yellowthroat, and Bryant's savannah sparrow habitat (breeding and foraging) and could possibly impact active nests, including eggs or nestlings. Program activities, particularly vegetation management (e.g., mowing and fuel management) may degrade habitat, as compared to existing conditions, and may maintain habitat in a reduced-quality state so that it supports fewer harriers over the long term. In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact these species' habitats, and potentially the ground nests of these species. However, because of the very limited extent of breeding and foraging habitat that would be affected relative to the extent of suitable foraging habitat and prey in the region, impacts on habitat for the northern harrier, Alameda song sparrow, San Francisco common yellowthroat, and Bryant's savannah sparrow would be considered less than significant.

Adult northern harriers, Alameda song sparrows, San Francisco common yellowthroats, and Bryant's savannah sparrows are not expected to be killed or injured due to Program activities

because they could easily fly from the work site prior to such effects occurring. However, in the absence of BMPs, eggs or young in nests may be killed or injured as a result of destruction by maintenance personnel or equipment, removal of vegetation containing nests, or impacts on nests from burning. Furthermore, nesting may be disrupted to the extent that nests would fail because of disturbance that was too frequent or too severe. In addition, program activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individual northern harriers, Alameda song sparrows, San Francisco common yellowthroats, and Bryant's savannah sparrows causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native predators that would be attracted to trash left in the work site. These impacts are expected to be temporary, occurring only while the maintenance activity is ongoing.

Implementation of BMPs would help to avoid and minimize such impacts on the northern harrier, Alameda song sparrow, San Francisco common yellowthroat, and Bryant's savannah sparrow. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC- 1 through EC–13 and SC-1 through SC–6 would minimize impacts on aquatic habitat due to erosion and sedimentation. Implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species, and BIO-23 would minimize the potential impacts of fire from burn piles. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the northern harrier, Alameda song sparrow, San Francisco common yellowthroat, and Bryant's savannah sparrow, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the northern harrier, Alameda song sparrow, San Francisco common yellowthroat, and Bryant's savannah sparrow and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking

- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would reduce impacts on the northern harrier, Alameda song sparrow, San Francisco common yellowthroat, Bryant's savannah sparrow, and their habitat so that they are **less than significant**.

BIO-1W: Long-eared Owl and Yellow Warbler (Less than Significant)

The long-eared owl, a California species of special concern when nesting, frequents dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats, but also may be found in dense conifer stands at higher elevations. In the program area, the long-eared owl occurs in small numbers throughout San Mateo County in appropriate habitat, but is relatively rare and secretive (SAS 2001, Cornell Lab of Ornithology 2019). The yellow warbler, a California species of special concern when nesting, prefers riparian corridors with an overstory of mature cottonwoods and sycamores, a midstory of box elder and willow, and a substantial shrub understory (Bousman 2007), particularly in areas with more open space adjacent to the riparian habitat. Although this species is an abundant migrant in the program area during the spring and fall, it is an uncommon to rare breeder. Riparian woodlands in the program area provide suitable nesting and foraging habitat, but the species is scarce and has a very limited distribution, occurring in only a limited subset of habitats that are ostensibly suitable (SAS 2001). The long-eared owl and yellow warbler are assessed together because both occupy riparian woodlands and the potential effects of the Program on these species would be similar.

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, *and* Roadside Ditches; Vegetation Management; Road and Trail Maintenance. Program activities may affect long-eared owl and yellow warbler habitat (breeding and foraging) and could possibly impact active nests, including eggs or nestlings. Program activities, particularly vegetation management (e.g., mowing, tree removal, and fuel management) may degrade habitat, as compared to existing conditions, and may maintain habitat in a reduced-quality state so that it supports fewer long-eared owls or yellow warblers over the long term. Because the yellow warbler often nests fairly low in trees, removal of the lower limbs of trees ("limbing up") would also remove habitat and, during the nesting season, could result in the direct loss of active nests. However, because of the very limited extent of breeding and foraging habitat that would be affected relative to the extent of suitable foraging habitat and prey in the region,

impacts on habitat for the long-eared owl and yellow warbler would be considered less than significant.

Adult long-eared owls and yellow warblers are not expected to be killed or injured due to Project activities because they could easily fly from the work site prior to such effects occurring. However, in the absence of BMPs, eggs or young in nests may be killed or injured as a result of destruction by maintenance personnel or equipment, or removal of vegetation containing nests. Furthermore, nesting may be disrupted to the extent that nests would fail because of disturbance that was too frequent or too severe. In addition, Program activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individual long-eared owls and yellow warblers causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native predators that would be attracted to trash left in the work site. These impacts are expected to be temporary, occurring only while the maintenance activity is ongoing.

Implementation of BMPs would help to avoid and minimize such impacts on the long-eared owl and yellow warbler. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, 10, and 21. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the long-eared owl and yellow warbler, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Marina Maintenance Activities. Because no suitable nesting habitat for the long-eared owl or yellow warbler is present where marina maintenance activities would occur, these maintenance activities would not result in significant impacts on these species.

Applicable Best Management Practices

The County would implement the following BMPs during proposed program activities to reduce impacts on the long-eared owl, yellow warbler, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking

- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-21: Domestic Animals

Conclusion

Implementation of BMPs would reduce impacts on the long-eared owl, yellow warbler, and their habitat so that they are **less than significant**.

BIO-1X: Bank Swallow, Black Swift, and Purple Martin (Less than Significant)

The bank swallow, state listed as threatened, and black swift and purple martin, both California species of special concern when breeding, occur in the program area in limited numbers, primarily as non-breeders, but they potentially could nest in the vicinity of maintenance sites. All of these species forage aerially over a variety of habitats. These species are assessed together because there is a very low potential for program activities to impact nesting pairs due to their limited distribution and because the potential effects of the proposed program on these species would be similar.

Bank swallows are found primarily in riparian and other lowland habitats. They nest colonially and inhabit isolated places where fine-textured or sandy vertical bluffs or riverbanks are available. In the program area, bank swallows occur as rare migrants along the coast and South Bay, although they could occur anywhere in the program area. As breeders, they are very rare. The only known extant breeding colony in San Mateo County is at Point Año Nuevo (CNDDB 2019). Black swifts nest on perpendicular cliffs near water. In the program area, the species occurs primarily along the immediate coast and coastal ranges, although it can occur anywhere in San Mateo County during migration (Cornell Lab of Ornithology 2019). It is a rare breeder in San Mateo County with the only known breeding location located at Año Nuevo State Park (SAS 2001). Purple martins nest in cavities in riparian woodlands, oak woodlands, coniferous forests, and montane mixed woodlands. Purple martins occur in the program area as rare migrants, primarily along the coast, although a few pairs nest along the ridgeline of the Santa Cruz Mountains (SAS 2001, Cornell Lab of Ornithology 2019).

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, and Ro*adside Ditches and GI Maintenance; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. Due to the limited nesting distribution of these species, physical loss of nesting sites is not expected to occur due to Program activities. However, bank swallows, black swifts, and purple martins could establish new nests over the next few years in areas close enough to program activities that the increased noise and movement of people and heavy equipment in close proximity to an active nest during the breeding season could result in abandonment of the nest, including eggs and young. Nonetheless, because of the relatively small amount of foraging habitat that would be affected relative to the extent of suitable foraging habitat and prey in the region, impacts on habitat for bank swallows, black swifts, and purple martins would be considered less than significant

Implementation of BMPs would help to avoid and minimize impacts on the bank swallow, black swift, and purple martin. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, 10, and 21. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness

training of maintenance personnel regarding the sensitivity of this species. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the bank swallow, black swift, and purple martin, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the bank swallow, black swift, purple martin, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-21: Domestic Animals

Conclusion

Implementation of BMPs would reduce impacts on the bank swallow, black swift, and purple martin and their habitat so that they are **less than significant**.

BIO-1Y Olive-Sided Flycatcher and Vaux's Swift (Less than Significant)

The olive-sided flycatcher and Vaux's swift, both California species of special concern when nesting, are assessed together because both occupy mature forests and the potential effects of the Program on these species would be similar.

The olive-sided flycatcher is associated with coniferous forest habitats and breed in mature forests with open canopies, along forest edges in more densely vegetated areas, in recently burned forest habitats, and in selectively harvested landscapes (Altman and Sallabanks 2000; Robertson and Hutto 2007). The olive-sided flycatcher occurs at low densities in woodland and forest habitats throughout much of the program area during the breeding season, with the exception of the highly developed South Bay (SAS 2001). During spring and fall migration, individuals can occur anywhere in the program area (Cornell Lab of Ornithology 2019). Vaux's swifts nest both in small colonies and as single pairs, occupying cavities in redwoods and other trees (Hunter and Mazurek 2003). Swifts forage on flying insects in the air above a variety of habitats. In the program area, the Vaux's swift breeds in mature redwood forests during the breeding season (SAS 2001), although it could potentially breed elsewhere, as it

occasionally nests in chimneys (Rottenborn 2007). This species can occur throughout the program area during the breeding season and migration (Cornell Lab of Ornithology 2019).

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, *and* Roadside Ditches; Vegetation Management; and Road and Trail Maintenance. Program activities may affect olive-sided flycatcher and Vaux's swift breeding and foraging habitat and could possibly impact active nests, including eggs or nestlings. Program activities, particularly vegetation management (e.g., tree removal and fuel management) may degrade habitat, as compared to existing conditions, and may maintain habitat in a reduced-quality state so that it supports fewer olive-sided flycatchers and Vaux's swifts over the long term. However, because of the very limited extent of mature forest habitat that would be affected relative to the extent of suitable habitat in the region, impacts on habitat for the olive-sided flycatcher and Vaux's swift would be considered less than significant.

Adult olive-sided flycatchers and Vaux's swifts are not expected to be killed or injured due to Program activities because they could easily fly from the work site prior to such effects occurring. However, in the absence of BMPs, eggs or young in nests may be killed or injured as a result of destruction by maintenance personnel or equipment, or removal of vegetation containing nests. Furthermore, nesting may be disrupted to the extent that nests would fail because of disturbance that was too frequent or too severe. In addition, program activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individuals causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native predators that would be attracted to trash left in the work site. These impacts are expected to be temporary, occurring only while the maintenance activity is ongoing.

Implementation of BMPs would help to avoid and minimize such impacts on the olive-sided flycatcher and Vaux's swift. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 5, 6, 7, 9, 10, and 21. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the olive-sided flycatcher and Vaux's swift, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Marina Maintenance Activities. Because no suitable nesting habitat for the olive-sided flycatcher or Vaux's swift is present in areas where marina maintenance activities would occur, these maintenance activities would not result in significant impacts on these species.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the olive-sided flycatcher, Vaux's swift, and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training

- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-21: Domestic Animals

Conclusion

Implementation of BMPs would reduce impacts on the olive-sided flycatcher, Vaux's swift, and their habitat so that they are **less than significant**.

BIO-1Z: Tricolored Blackbird (Less than Significant)

The tricolored blackbird, state listed as threatened, typically nests in tall, dense stands of cattails or tules, but also nests in blackberry, wild rose bushes, and tall herbs. Nesting colonies usually are located near fresh water. Suitable habitat for the tricolored blackbird occurs primarily along the coastal lowlands of the program area and in the San Francisco Bay lowlands, and less frequently along the ridgeline of the Santa Cruz Mountains. It is an uncommon to common migrant and wintering visitor (SAS 2001, Cornell Lab of Ornithology 2019); however, there are no recent breeding records from San Mateo County (CNDDB 2019).

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, *and* Roadside Ditches and GI Maintenance; Vegetation Management; and Road and Trail Maintenance. Although suitable nesting habitat for the tricolored blackbird is present in the program area, the species is not currently known to nest in or near any anticipated routine maintenance sites identified in the Manual (Appendix A). Nevertheless, it is possible that a tricolored blackbird nesting colony could form in the program area in the future. If nesting tricolored blackbirds are present in or adjacent to a project site during maintenance activities, such activities may impact breeding habitat and could possibly impact active nests, including eggs or nestlings. Program activities, particularly vegetation management (e.g., mowing and fuel management) may degrade habitat, as compared to existing conditions, and may maintain habitat in a reduced-quality state so that it supports fewer nesting tricolored blackbirds. Foraging habitat for tricolored blackbirds could also be impacted. However, because of the very limited extent of potential habitat that would be affected relative to the extent of suitable habitat in the region, impacts on habitat for the tricolored blackbird would be considered less than significant.

Adult tricolored blackbirds are not expected to be killed or injured due to program activities because they could easily fly from the work site prior to such effects occurring. However, in the absence of BMPs, eggs or young in nests may be killed or injured as a result of destruction by maintenance personnel or equipment, or removal of vegetation containing nests. Furthermore, nesting may be disrupted to the extent that nests would fail because of

disturbance that was too frequent or too severe. In addition, program activities causing a substantial increase in noise, movement of equipment, or human presence may have a direct effect on the behavior of individuals causing them to avoid work sites and possibly exposing them to increased competition with other birds in the areas to which they disperse and increased levels of predation caused by unfamiliarity with the new area. Increases in human concentration and activity associated with maintenance activities near suitable habitat also may result in an increase in native and non-native predators that would be attracted to trash left in the work site. These impacts are expected to be temporary, occurring only while the maintenance activity is ongoing.

Implementation of BMPs would help to avoid and minimize such impacts on nesting tricolored blackbirds. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC- 1 through EC-13 and SC-1 through SC-6 would minimize impacts due to erosion and sedimentation. Implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, including the tricolored blackbird, through the identification of active nests and implementation of non-disturbance buffers around such nests.

Marina Maintenance Activities. Because no suitable nesting habitat for the tricolored blackbird is present in areas where marina maintenance activities would occur, these maintenance activities would not result in significant impacts on this species.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the tricolored blackbird and its nesting habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities

- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Tricolored blackbirds are not expected to breed in or near program areas. Nevertheless, should they be present, implementation of the BMPs listed above would reduce impacts on nesting tricolored blackbirds and their habitat so that they are **less than significant**.

BIO-1AA: Salt Marsh Harvest Mouse and Salt Marsh Wandering Shrew (Less than Significant)

The salt marsh harvest mouse, federally and state listed as endangered and state fully protected, has been detected in salt marsh habitat along the Bay. However, suitable habitat in the program area is very limited. The salt marsh harvest mouse is not known to occur in San Mateo County north of the San Mateo-Hayward Bridge, and no program activities are expected to occur in marsh habitat south of this bridge. The salt marsh wandering shrew, a California species of special concern, is likely present in broader salt and brackish marshes along the Bay. However, there is a low probability of occurrence in the program area owing to the fragmented nature of salt marsh habitat around San Francisco International Airport and Coyote Point Recreation Area. The salt marsh harvest mouse and salt marsh wandering shrew were assessed together because they occupy similar habitat and potential impacts of the proposed program on them would be similar.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. No program activities would occur within habitat for the salt marsh harvest mouse or salt marsh wandering shrew, or close enough to suitable habitat to result in adverse effects on these species.

Applicable Best Management Practices

Not applicable.

Conclusion

No program activities would occur within habitat for the salt marsh harvest mouse or salt marsh wandering shrew, or close enough to suitable habitat to result in adverse effects on these species. Thus, program impacts on the salt marsh harvest mouse and salt marsh wandering shrew would be **less than significant**.

BIO-1BB: San Francisco Dusky-footed Woodrat (Less than Significant)

The San Francisco dusky-footed woodrat, a California species of special concern, occurs in woodlands and scrub habitats throughout much of the program area, and can be abundant in suitable habitat.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; and Road and Trail Maintenance*. Program activities may result in the injury or mortality of dusky-footed woodrats because of equipment use, vehicle traffic, and worker foot traffic, particularly when woodrats are taking refuge in their stick nests. Suitable habitat and nests may be directly lost as a result of clearing and grading for bank stabilization or stream access and through the modification of suitable habitat because of vegetation management activities, particularly pruning and herbicide application. Pruning may open up a stand or location to direct sunlight on a nest, which could lead to nest abandonment. In the absence of BMPs, burning vegetation debris could potentially result in uncontained spread of fire that could impact this species' habitats and nests, and possibly result in injury or mortality of woodrats that are using the debris piles that are being burned.

In the absence of BMPs, direct impacts on San Francisco dusky-footed woodrats resulting from proposed program activities could potentially result in the loss of tens or even hundreds of nests and individuals, in part because of the species' abundance in suitable habitat. Indirect impacts also could occur as a result of over-crowding (as individuals lost habitat and moved to areas that were already occupied) and increased risk of predation. As a result of the species' regional abundance and high reproductive capabilities, program impacts on dusky-footed woodrats would not have a substantial effect on regional populations. However, woodrats are very important ecologically in that they provide an important prey source for raptors (particularly owls) and for predatory mammals, and their nests also provide habitat for a wide variety of small mammals, reptiles, and amphibians.

Implementation of BMPs would avoid or minimize impacts on San Francisco dusky-footed woodrats. General BMPs include BMPs GEN-1, 2, 7, and 21. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of this species. Further, BMP BIO-8, which includes preconstruction surveys and relocation of nests that cannot be avoided, would be implemented to specifically avoid and minimize impacts on the San Francisco dusky-footed woodrat. BMP BIO-23 would minimize the potential for impacts on this species and its habitats from burning of vegetation.

Marina Maintenance. Because no suitable habitat for the San Francisco dusky-footed woodrat is present in areas where marina maintenance activities would occur, these activities would not result in impacts on the San Francisco dusky-footed woodrat or its habitat.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the San Francisco dusky-footed woodrat and its habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training

- BMP BIO-8: Minimize Impacts on Dusky-footed Woodrat Nests
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-21: Domestic Animals

Conclusion

Implementation of BMPs would be adequate to assure that impacts on the San Francisco dusky-footed woodrat and its habitat would be **less than significant**. More specifically, BMP BIO-8 would help to protect the species that often use woodrat houses for shelter by minimizing the outright destruction of nests and relocating nest materials when nests cannot be avoided.

Because this species' habitat is relatively widespread, Program impacts would not require additional species-specific habitat mitigation. Nevertheless, while not necessary to reduce this impact to a less than significant level, implementation of Mitigation Measure BIO-8 to provide compensation for impacts on woody riparian vegetation, as described under Impact BIO-2, would compensate for impacts on riparian habitat supporting the San Francisco dusky-footed woodrat, by providing riparian mitigation that could benefit this species.

BIO-1CC: Pallid Bat and Townsend's Big-eared Bat (Less than Significant with Mitigation)

The pallid bat, a California species of special concern, occurs sporadically throughout open areas and along roads of the Pacific coastal regions and the Santa Cruz Mountains within the program area. The Townsend's big-eared bat, a California species of special concern, is a rare resident in the coastal region of the program area, potentially roosting in old mines, caves, very large cavities in redwood trees, and barns and abandoned buildings in the Santa Cruz Mountains. It has been extirpated from the flat Bayside lands of the eastern portion of the program area. These species are analyzed together because program impacts on them would be similar.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; and Marina Maintenance*. In the absence of BMPs, program-related disturbance near a maternity roost of pallid or Townsend's big-eared bats could cause females to abandon their young. Such impacts could be significant because the species' populations are limited locally and regionally and loss of individuals may have a substantial adverse effect on local and regional populations of these species.

Although trees with cavities are common in the Coastside of San Mateo County, many factors play a role in determining the suitability of a given cavity as roosting habitat for pallid or Townsend's big-eared bats. For example, both species are highly sensitive to the presence of nearby anthropogenic disturbances. In addition, cavity characteristics such as size, height above the ground, solar exposure (which effects roost temperature), number of cavity entrances, and proximity to foraging habitat all play a role in determining the suitability of a cavity. Thus, suitable roosting habitat is limited in the program area, and program activities that result in the permanent abandonment of a large roost (i.e., ≥ 10 individuals) would be a

significant impact on habitat for the locally and regionally limited populations of pallid and Townsend's big-eared bats.

Implementation of BMPs would avoid or minimize impacts on roosting pallid and Townsend's big-eared bats and their habitat. General BMPs include BMPs GEN-1 and 2. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of these species. Further, BMP BIO-14, which includes preconstruction surveys, avoidance of active roosts if feasible, buffers around active nests, and seasonal work windows for disturbance of roost trees that cannot be avoided would be implemented to specifically avoid and minimize impacts on bats.

Vegetation Management. In the absence of BMPs, removal or pruning of trees has the potential to result in the loss of roosting pallid bats and Townsend's big-eared bats. When trees containing roosting colonies or individual pallid bats or Townsend's big-eared bats are removed or modified, individual bats could be physically injured or killed; could be subjected to physiological stress from being disturbed during torpor; or could face increased predation because of exposure during daylight, a potentially significant impact. In addition, nursing young may be subjected to disturbance-related abandonment by their mothers. Program-related disturbance near a maternity roost of pallid or Townsend's big-eared bats could cause females to abandon their young. Such impacts could be significant because the species' population and available roosting habitat are limited locally and regionally and because loss of habitat or individuals may have a substantial adverse effect on local and regional populations of the species. Maintenance activities also may result in the loss or reduction of a small amount of foraging habitat, such as streams and open grassland areas over which the bats forage, although the extent of such impacts would not substantially affect the regional availability of foraging habitat. Implementation of BMPs, as described above, would help to avoid or minimize impacts of vegetation management on bat roosts. Regardless, even with implementation of BMPs, impacts on these species would remain potentially significant.

Applicable Best Management Practices

The County would implement the following BMPs during proposed program activities to reduce impacts on the pallid bat, Townsend's big-eared bat, and their habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-14: Measures to Protect Bat Colonies
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance

Conclusion

Implementation of BMPs would reduce impacts on the pallid bat, Townsend's big-eared bat, and their roosting habitat. However, residual impacts would remain if complete avoidance of long-term impacts on roosting habitat for these species (e.g., removal of a high-quality roost site) is not feasible. This impact would be significant because these species' populations and available habitat are limited locally and regionally and because loss of a high-quality roosting site may have a substantial impact on local and regional populations of these species. Implementation of **Mitigation Measure BIO-7** will reduce impacts on the pallid bat and

Townsend's big-eared bat to less-than-significant levels by providing alternative roosting habitat suitable for use by these species, thereby ensuring that the proposed Program does not substantially reduce the number or restrict the range of these rare species, have a substantial adverse effect on these special-status species, or impede the use of their nursery sites. Implementation of **Mitigation Measure BIO-7** would reduce the impact on roost sites for the pallid bat and Townsend's big-eared bat to a level that is **less than significant with mitigation**.

Mitigation Measure BIO-7: Provide Alternative Bat Roost Habitat

If a tree containing a pallid or Townsend's big-eared bat maternity roost, or a large non-maternity roost (i.e., ≥ 10 individuals), is to be removed by proposed program activities, a qualified bat biologist will design and determine an appropriate location for an alternative roost structure. If a tree containing a pallid or Townsend's big-eared bat maternity roost or large non-maternity roost is not removed, but program-related disturbance causes the abandonment of the roost site (even during the non-breeding season), then the County will either monitor the roost site to determine whether the affected species returns to the roost, or construct an alternative roost. If the County elects to monitor the roost and bats do not return within one year, an alternative roost will be constructed.

A qualified bat biologist will determine the appropriate location for the alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity, and oversee installation of a new roost structure. The roost structure either will be built to specifications determined by a qualified bat biologist, or will be purchased from an appropriate vendor (though a qualified bat biologist should approve the type of structure purchased). The structure will be placed as close to the affected roost site as feasible. The County will monitor the roost for up to three years (or until occupancy is determined, whichever occurs first) to determine use by bats. If, by Year 3, pallid bats or Townsend's big-eared bats are not using the structure, a qualified bat biologist, in consultation with CDFW, will identify alternative roost designs or locations for placement of the roost, place the new roost at the agreed-upon location, and monitor the new roost for an additional three years (or until occupancy has been verified).

BIO-1DD: Disturbance of, or Loss/Reduction of Breeding and/or Foraging Habitat for, Other Special-Status Mammals (Less than Significant)

The American badger, a California species of special concern, may occur in low numbers throughout open Coastside areas and grasslands in the Santa Cruz Mountains within the program area. This species is not expected to occur on the flat Bayside lands of the eastern portion of the program area due to the dense urbanization in that area. Suitable habitat for the ringtail, a state fully protected species, is present in portions of the program area with dense woodlands and/or rocky outcroppings, primarily in the less developed western portion of the program area. The western red bat does not breed in the program area, so no maternity roosts would be affected by proposed program activities. Western red bats are strongly associated with intact cottonwood/sycamore valley riparian habitats at low elevations (Pierson et al. 2006), and they roost solitarily in foliage.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. Badgers require large expanses of open habitat but may use riparian habitat or stream edges during dispersal. Maintenance activities may disturb foraging badgers or temporarily cause badgers to modify their foraging or dispersal areas, but such effects would be very short-lived. Although proposed program activities may occur along the margins of large areas of open habitat, program activities are not expected to occur deep within extensive grassland areas where badgers could potentially den, and therefore program activities are not expected to result in destruction or physical alteration of badger dens. In the absence of BMPs, however, burning vegetation debris could potentially result in uncontained spread of fire that could impact this species' habitat and possibly its dens.

Proposed program activities may result in the loss of a small amount of habitat for ringtails, and possibly temporary impacts on individuals due to disturbance (e.g., ringtails may avoid maintenance work sites and alter their foraging behaviors because of increased noise and activities). These impacts would not result in the loss of individuals, which are mobile enough to avoid construction personnel and equipment. Given the very scarce and local nature of ringtails in the program area, maintenance activities are not expected to impact this species' dens or result in injury or mortality of individuals.

The western red bat does not breed in the program area but roosts in the foliage of trees during winter or migration. This bat is strongly associated with intact cottonwood and sycamore valley riparian habitats in low elevations, but it may roost anywhere in the program area and may use other trees as well. Individuals of this species roost solitarily in foliage, and the number of individuals that could be present on a project site at any given time (and thus the number that could be affected) is likely low. These bats forage aerially in a variety of habitat types, and western red bat food sources could be affected by proposed program activities in similar ways to those described above for the pallid and Townsend's big-eared bats (see Impact BIO-1CC). Further, when trees supporting individual bats are removed or modified, individual western red bats could be affected in the same ways described above for adult pallid and Townsend's big-eared bats.

Implementation of BMPs GEN-2 and BIO-1 would minimize impacts on American badgers, ringtails, and western red bats through minimization of the area of disturbance and environmental awareness training of maintenance personnel regarding the sensitivity of these species, and BMP BIO-23 would minimize the potential for impacts on badger habitat from burning of vegetation.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on the American badger, ringtail, and western red bat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-23: Burn Piles
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance

Conclusion

Based on the low densities at which American badgers and ringtails occur, and the potential occurrence of western red bats as solitary (i.e., non-colonial) nonbreeding individuals, the number of individuals of these species that could be disturbed by proposed program activities is very small. Given the abundance of the western red bat in suitable habitat in many other parts of the region, and the low potential for impacts to badgers and ringtails, the number of individuals that could be affected by the proposed program represents a very small proportion of the regional populations of these species. Furthermore, these species would still be able to move through the proposed program area during and following maintenance activities. As a result, this impact does not achieve the threshold of a substantial reduction in these species' regional populations, and thus, the impact would be **less than significant**.

BIO-1EE: California Black Rail, Black Skimmer, and Short-eared Owl (Less than Significant)

Three special-status bird species occur in the program area primarily as non-breeding migrants, transients, or foragers, but they are not expected to breed or occur in large numbers in areas that could be adversely affected by proposed maintenance activities; these are the California black rail, black skimmer, and short-eared owl. The California black rail, state listed as threatened and fully protected, occurs in the South Bay primarily as a scarce winter visitor. Although small numbers of black rails may nest in more extensive salt marsh along the Bay shoreline, no suitable breeding habitat is present within the program area due to the limited extent of Bay marshland. Suitable nonbreeding habitat within the program area is present only within a small flood zone at Ravenswood Slough and along the shoreline of the San Francisco International Airport, and even there, suitable habitat is very limited. Thus, California black rails are expected to occur rarely, if at all, in the program area.

The black skimmer, a California species of special concern when nesting, was considered a rare non-breeding visitor to the San Francisco Bay Area until the mid-1990s when nesting was first documented (Layne et al. 1996). In the program area, the black skimmer is known to have nested at Redwood Shores and in managed ponds in the Menlo Park/East Palo Alto area, areas where no program maintenance activities are proposed or expected to occur. It also occurs on the coast as a very rare migrant (SAS 2001, Cornell Lab of Ornithology 2019). Because this species is only considered a species of special concern when nesting, it would not be considered a special-status species when it occurs in the program area as a migrant.

The short-eared owl, a California species of special concern, occurs in the program area primarily from October to March, with most records confined to coastal marshes, grasslands, and fallow fields and to tidal marshes of South San Francisco Bay (SAS 2001, Cornell Lab of Ornithology 2019).

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, and Ro*adside Ditches; Vegetation Management; Road and Trail Maintenance, and Marina Maintenance*. The proposed program would not impact suitable or occupied nesting habitat of these species, as these species are not expected to nest in areas where maintenance will occur. However, maintenance activities would have some potential to impact foraging habitats and/or foraging individuals of these species. Maintenance activities associated with the proposed program may result in a temporary direct impact through the alteration of foraging patterns (e.g., avoidance of work sites because of increased noise and activity levels during

maintenance activities) but would not result in the loss of individuals. Furthermore, the program area does not provide important foraging habitat used regularly or by large numbers of individuals of any of these species. Nevertheless, implementation of BMPs to limit impacts to sensitive habitats would minimize impacts to potential foraging habitat of these species.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on the California black rail, black skimmer, and short-eared owl, and their habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-21: Domestic Animals
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Impacts on these species and their habitats resulting from the proposed program would be very limited, and for some of these species may not occur at all. Accordingly, proposed program activities would not result in substantial reductions in local or regional populations, and would only affect a very low proportion of regionally available habitat. Thus, impacts on non-breeding special-status birds would be **less than significant**.

Impact BIO-2: Potential Adverse Effects on Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations or by CDFW, USFWS, or NMFS (Less than Significant with Mitigation)

BIO-2A. Impacts on Riparian Habitat or Other Sensitive Natural Communities (Less than Significant with Mitigation)

Though limited in acreage throughout San Mateo County, riparian communities serve important ecological function in the landscape given their position as a linkage between terrestrial and aquatic communities, and the various ecological functions they serve for many species providing foraging opportunities, and diverse habitat structure for cover and nesting opportunities. Statewide, riparian communities are particularly threatened by project activities given their limited distribution and sensitivity to disturbance.

Other sensitive natural communities that would have potential to be impacted by proposed program activities include coastal freshwater marsh (freshwater emergent wetlands and wet meadows) and northern coastal salt marsh (saline emergent wetlands and bay margins [tidal mudflats]) which are discussed below in Impact BIO-3. Serpentine Grassland and Chaparral, Valley Needlegrass Grassland, Northern Interior Cypress Forest, Monterey Pine Forest, and Northern Maritime Chaparral are other sensitive natural communities that are tracked by the CNDDB and which have potential to occur in San Mateo County. These communities are limited in size and distribution, and proposed program maintenance activities are not expected to have a significant impact on these communities because program activities in areas where they occur would be limited, if they occur at all. It is possible that some minor impacts to these sensitive habitats should occur; for example, there could be some impact during trail maintenance through these habitat types, and access to work areas could potentially occur through these habitat types. However, with implementation of BMPs such as GEN-1 to limit the extent of the work area and avoid impacts to sensitive habitats, GEN-2 to minimize the area of disturbance, and BIO-1 to provide environmental awareness training, program activities are not expected to result in extensive impacts or type-conversion of any of these sensitive natural communities. Thus, proposed program activities are not expected to have a substantial adverse effect on these sensitive natural communities. Potential effects on riparian habitat are discussed further below.

Creek Bank Stabilization; Culvert, Storm Drainage, Channel, Bridge, *and* Roadside Ditches; Vegetation Management; and Road and Trail Maintenance. Bank stabilization, sediment removal, and vegetation management activities have the potential to result in the loss and disturbance of woody riparian vegetation in those cases where Program activities would take place in riparian corridors (along stream banks). These activities could result in the loss of vegetation through direct removal, herbicide use, trampling, and other impacts. Maintenance activities could also impact native riparian vegetation through the introduction and spread of pathogens such as Phytophthora.

The effects of bank stabilization, sediment removal, and vegetation management activities on riparian vegetation have not been quantified, as the precise amount of stream bank to be stabilized, sediment to be removed, or extent of vegetation management by program activities cannot be quantified at this time. Such impacts will be determined prior to implementation of the maintenance activity and reported in the annual work plan and resource agency notification. Riparian vegetation that is removed by proposed program activities is expected to regrow, except in areas where bank stabilization would result in the

permanent loss of natural streambank, or where capacity or other maintenance activities would require the permanent exclusion of vegetation. Thus, most program impacts on riparian habitats would be temporary in that proposed maintenance activities would not preclude the potential for woody riparian vegetation to regrow. However, repetitive impacts on woody riparian vegetation would prevent regrowth if they were to occur.

As discussed above, woody riparian habitats in the program area provide a wide range of biological functions for fish and wildlife, ranging from providing habitat for fish and other aquatic species to foraging and nesting habitat for birds, to movement corridors for numerous terrestrial species. As a result, impacts on riparian habitats would affect a variety of fish and wildlife species as well. Impacts on special-status plant and animal species resulting from disturbance or loss of riparian habitat are addressed in separate impact descriptions above.

Riparian vegetation at some maintenance sites would include herbaceous vegetation rather than woody vegetation. Herbaceous vegetation, which often includes non-native species such as black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), perennial ryegrass (*Lolium perenne*), Italian thistle, bristly ox-tongue, sweet fennel (*Foeniculum vulgare*), and smilograss (*Piptatherum miliaceum*), typically dominates the banks of reaches that would be frequently disturbed (including disturbance from ongoing maintenance activities). Such vegetation regenerates quickly and, compared to woody riparian vegetation dominated by trees and shrubs, would provide relatively low functions and values for wildlife. As a result, impacts of proposed program activities on non-wetland, herbaceous riparian vegetation would not have substantial ecological effects.

The County would implement a number of measures to address the impact of Program activities on woody riparian vegetation, including limiting impacts to the minimum area required and conducting pruning according to the National ANSI A300 standards. Relevant general BMPs include BMPs GEN-1 through GEN-16, GEN-18 and GEN-22. BMPs GEN-22, EC-1 through EC-14, and SC-1 through SC-6 are specifically designed to reduce adverse effects on water quality, such as increased turbidity. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from maintenance vehicles or equipment may also adversely affect water quality within or downstream from the activity area, and fresh concrete may release harmful chemicals into the water if rewatering occurs before the concrete has cured. These impacts would be minimized by implementation of BMPs GEN-5 through GEN-16. BMP GEN-4 is designed to salvage and reuse plant and woody material that may be temporarily removed or disturbed by a program activity. If the activity is occurring in a riparian setting, native material that is displaced by the project activity would be stockpiled if it would be useful during site restoration. Implementation of BMP BIO-24 would minimize the potential impacts of plant pathogens.

For creek bank stabilization projects, the County would seek to implement biotechnical solutions to the extent feasible to avoid or minimize the potential hardening of creek banks. For many program activities, this will occur as part of implementing one of the biotechnical Erosion Control BMPs (e.g., BMPs EC-1 through EC-14). For example, implementing EC-1 (Brush Layering), EC-2 (Brush Packing), EC-3 (Live Staking), or EC-4 (Live Pole Drain), would involve using willow stakes (and other woody native material that can re-sprout) as a biotechnical repair technique would result in the re-establishment of woody riparian habitat in-place following maintenance activities. Disturbed areas would be revegetated with native plants in accordance with BMP GEN-22.

Marina Maintenance. No riparian habitat is present in areas where marina maintenance activities would occur. Thus, such activities would not result in impacts on riparian habitat.

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on riparian habitat. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-24: Pathogen Control
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-4: Salvage/Reuse of Plant and Woody Material
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-19: Dust Management Controls
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would minimize disturbance of woody riparian vegetation. Nevertheless, the Program would result in temporal losses of woody riparian functions and values and some permanent losses of woody riparian habitat because complete avoidance could not be accomplished while still meeting the program goals for public health and safety directives. Thus, significant residual impacts would remain. The impact of Program activities on woody riparian vegetation is considered significant because it would result in short-term degradation of riparian habitat (fourth significance criterion in Section 3.4.3 under "Criteria for Determining Significance") and temporary and permanent loss of riparian vegetation. Implementation of **Mitigation Measure BIO-8** would mitigate impacts on riparian habitat to

less-than-significant levels by replacing lost riparian habitat through restoration or by replacing the lost functions and values provided by these habitats through other means, such as non-native plant removal and watershed protection. Mitigation Measure BIO-8 will thus ensure that Program activities do not result in a substantial adverse effect on riparian habitat; this impact would be **less than significant with mitigation**.

As discussed above, riparian vegetation in some work sites would include herbaceous vegetation rather than woody vegetation. Compared to woody riparian vegetation dominated by trees and shrubs, such vegetation regenerates quickly and generally provides relatively low functions and values for wildlife. As a result, impacts of Program activities on non-wetland, herbaceous riparian vegetation are less-than-significant, and no mitigation for such impacts is required (although impacts to herbaceous wetland vegetation, which may extend up into riparian areas from the creek channel, would be significant as discussed under Impact BIO-3 below).

Mitigation Measure BIO-8: Provide Compensatory Mitigation for Woody Riparian Vegetation

The compensatory mitigation package, which is incorporated into the proposed Program, will be implemented to compensate for impacts on woody riparian vegetation.

By April 30 of each year, the County would notify the relevant regulatory agencies (i.e., those agencies with jurisdictional authority or oversight) of the year's planned maintenance projects. The relevant regulatory agencies would be provided with information describing proposed maintenance project activities, locations, natural resource conditions, and any other key resource issues. The notification package would describe which ground-disturbing maintenance activities would result in impacts on temporary and permanent impacts on riparian habitat. It would also describe in detail the County's proposal for providing compensatory mitigation for those impacts and may include one or more options described in Chapter 2, Section 2.7.3 and summarized below.

For regular maintenance activities that have potential to remove some riparian habitat, the preferred mitigation approach is on-site mitigation. The general on-site mitigation approach is to restore the type of habitat that is impacted by maintenance activities in the same project vicinity or stream reach where the disturbance has occurred. For example, for creek bank stabilization projects, the County would seek to implement biotechnical solutions, as conditions allow, to avoid or minimize the potential hardening of creek banks. For many program activities, this will occur as part of implementing one of the biotechnical Erosion Control BMPs (e.g., BMPs EC-1 through EC-14). For example, implementing EC-1: Brush Layering, EC-2: Brush Packing, EC-3: Live Staking, or EC-4: Live Pole Drain, would involve using willow stakes (and other woody native material that can re-sprout) as a biotechnical repair technique would result in the re-establishment of woody riparian habitat in-place following maintenance activities.

For on-site, in-kind mitigation, the County will restore, preserve, and manage riparian habitats, or substantially improve the quality of highly degraded riparian habitats at

a ratio of 1.5:1, meaning 1.5 acres of riparian habitat will be restored/created for every 1 acre of riparian habitat impacted by proposed program activities.

Where on-site mitigation is not possible, off-site mitigation can provide opportunities for in-kind mitigation that aligns with the functions and values of natural resources that are potentially impacted by the proposed program but is done at a different location than where the maintenance occurs. The general approach is to conduct off-site mitigation within the same watershed or general region as where the maintenance activities occur. This type of mitigation is similar to the on-site option in that the focus is to provide in-kind habitat enhancement or restoration, stream functional improvement, water quality benefits, or overall watershed health improvements that offset maintenance impacts or reduce the need for maintenance. Several off-site mitigation options are identified in the Maintenance Manual (Appendix A), including future restoration efforts at the San Vicente Creek Enhancement Project, future projects within Pescadero Creek Park, invasive plant and tree removal on Park lands, gully repair and large woody debris implementation projects in the Pescadero-Butano Creek watershed, invasive plant removal at Quarry Park in Half Moon Bay, creek restoration in Junipero Serra County Park, and removal of concrete from El Zanjon Creek.

For off-site, in-kind mitigation for riparian habitat, the County will acquire, preserve, enhance, and manage lands that provide similar ecological functions and values to the riparian impacted by program maintenance activities. The acquisition and preservation/enhancement of these higher quality lands will occur at a ratio of 3:1, meaning 3 acres of riparian shall be acquired, preserved, and enhanced for every 1 acre of riparian habitat impacted by proposed Program activities. Enhancement may include modification of existing management, limited planting, or invasive plant removal, or other activities to enhance riparian/aquatic habitat functions and values.

Other options for compensatory mitigation include establishing conservation easements or deed restrictions, partnering with local San Mateo County based watershed, stewardship, or non-profit organizations that lead or coordinate habitat restoration or watershed improvement projects.

BIO-2B. Impacts Caused by Non-Native and Invasive Species and Pathogens (Less than Significant)

A variety of highly-invasive plant species occur in the program area. A list of such invasive plant species is provided in Table 4-4 in Chapter 4 of the Maintenance Manual (Appendix A). Invasive species can spread quickly and can be difficult to eradicate. Many non-native, invasive plant species produce seeds that germinate readily following disturbance. Further, disturbed areas are highly susceptible to colonization by non-native, invasive species that occur locally, or whose propagules are transported by personnel, vehicles, and other equipment.

Program activities such as trampling, equipment staging, and vegetation removal are all factors that would contribute to disturbance. Areas of disturbance could serve as the source for promoting the spread of non-native species, which could degrade the ecological values of wetlands that occur immediately adjacent to program maintenance sites, and adversely affect native plants and wildlife that occur there.

Program activities also have the potential to introduce or spread pathogens that adversely affect native plants and animals. For example, *Phytophthora a*re microscopic oomycetes (water molds) that can cause root rots, stem cankers, and fruit and leaf blight. Primarily spread via contaminated soil and water (some species are aerially dispersed), *Phytophthora p*athogens can affect plants in a variety of habitats, from dry chaparral and woodland to mesic wetlands and riparian plant communities. Once introduced into native habitats, *Phytophthora p*ersists in soil and infected host roots. Once *Phytophthora i*nfestations expand beyond very limited areas, they are very difficult to impossible to eradicate (Swiecki and Bernhardt 2014). Perhaps the most well-known results of *Phytophthora i*nfestations is sudden oak death (SOD), a forest disease that attacks oaks and tanoak. This disease has caused widespread loss of oaks in coastal areas from Monterey County, California north to southwestern Orgeon.

Batrachochytrium dendrobatidis (Bd) is a species of chytrid fungus that is only found in amphibians. It has been found in most of the world's approximately 6,000 amphibian species (AmphibianArk 2019). The Bd fungus infects the skin with large numbers of spores, and changes the structure of skin cells so that abnormal electrolyte levels occur in the Bd-damaged skin, and subsequently the animal's heart, which can lead to amphibian to die by causing the heart to stop beating (Voyles et al. 2009). Moreover, chytridiomycosis (the disease caused by Bd) can cause very rapid and sharp declines in amphibian populations, sometimes in just a few weeks (Lips et al. 2006), and can disproportionately impact species that are rare, specialized, and endemic (Smith et al. 2009). Infection with Bd is spread by zoospores, a form of the fungus that moves through water or most environments, including on soil, equipment, or on the skin of infected amphibians themselves. It is possible that zoospores may also be transmitted via boots, invertebrates, or birds (AmphibianArk 2019).

Pathogens such as *Phytophthora a*nd Bd may be introduced or spread by program activities primarily via infected equipment, or infected soil or vegetation. When equipment, personnel with mud on boots, or vegetation is transported from infected locations to uninfected locations, these pathogens may spread, potentially resulting in impacts to native vegetation (from *Phytophthora*) or amphibians (from Bd). Both common and special-status species may be affected by these pathogens.

BMP BIO-18, which requires cleaning of all equipment prior to arriving at routine maintenance sites (to prevent introduction of undesirable plant species) and the control of and removal of invasive plant species prior to activities, would be implemented to specifically avoid and minimize impacts due to the spread of invasive species. Similarly, BMP BIO-24 will be implemented to minimize the potential spread of pathogens such as *Phytophthora a*nd Bd. While BMP GEN-22, which calls for the covering of bare soils with erosion control (e.g., seeding, planting, mulch, etc.) does not specify the type (i.e., native/non-native) of material to be used, BMPs EC-6 and EC-7, which call for seeding, do specify the use of an "appropriate" seed mix to discourage colonization by non-native and invasive plant species. This designation should be taken to mean native plant species that are derived from sources within the San Francisco Bay area, so as to preserve local genetics.

Applicable Best Management Practices

The County would implement the following BMPs during proposed program activities to reduce impacts due to the spread of invasive plant species and pathogens. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-18: Invasive Plant Control
- BMP BIO-24: Pathogen Control
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-22: Site Stabilization
- BMP EC-6: Hand Seeding
- BMP EC-7: Hydroseeding

Conclusion

Implementation of the above-referenced BMPs would reduce the impact of proposed program activities due to the spread of invasive species to **less than significant**.

Impact BIO-3: Potential Adverse Effects on Federally or State Protected Wetlands as Defined by Section 404 of the Clean Water Act (*Less than Significant with Mitigation*)

Wetlands serve a variety of important functions, such as sediment stabilization, sediment/toxicant retention, nutrient removal/transformation, and aquatic and terrestrial wildlife species habitat. These functions may be adversely affected as a result of proposed program activities. Two wetland types, coastal freshwater marsh (freshwater emergent wetlands and wet meadows) and northern coastal salt marsh (saline emergent wetlands and bay margins [tidal mudflats]), are found in the program area and are considered sensitive habitats.

*Creek Bank Stabilization. B*ank stabilization activities and subsequent changes in hydrology may result in changes to the extent of wetland and aquatic communities present in a work site. Wetland vegetation may be lost as a result of mechanical or physical clearing in the work site (including access areas) and damage to vegetation may occur as a result of crushing by equipment; trampling by personnel; and compaction of soil, which could result in damage to plant roots. Some bank stabilization activities would require temporary water diversions or dewatering. This activity would result in the temporary loss of aquatic and wetland communities and may result in increased turbidity within and downstream from the footprint of the activities caused by mobilization of fine sediments. In addition, because barren slopes are more susceptible to erosion from incident rainfall, the loss of wetland vegetation and non-instream vegetation along stream banks following bank stabilization activities may result in an increase in erosion and sedimentation. Increased erosion and sedimentation may lead to the filling in of pools and damage to wetland vegetation. Bank stabilization also may affect downstream areas by altering flow patterns.

These activities could result in the placement of fill, hydrological interruption (e.g., dewatering or diversion), alteration of bed and bank, degradation of water quality (e.g., increased sedimentation and turbidity), and other direct impacts, which would be a potentially significant impact (third significance listed above in Section 3.4.3 under "Criteria for Determining Significance"). The activities would primarily result in the short-term loss and disturbance of wetlands and aquatic habitats; however, small permanent losses could occur because of the use of hardscape for bank stabilization activities.

The County would implement a number of BMPs to address the impacts of Program activities on wetlands and other waters. General BMPs tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects. Relevant general BMPs include BMPs GEN-1 (minimizing impacts from staging and access), GEN-2 (minimizing the area of disturbance), GEN-3 (to minimize impacts at work area entrances and around the perimeter), GEN-5 through GEN-16, GEN-18, and GEN-22 (to stabilize the site, including revegetating disturbed areas, following completion of ground-disturbing activities). BMPs GEN-21, EC-1 through EC-14, and SC-1 through SC-6 are specifically designed to reduce adverse effects on water quality, such as increased turbidity. Petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from maintenance vehicles or equipment may also adversely affect water quality within or downstream from the activity area, and fresh concrete may release harmful chemicals into the water if rewatering occurs before the concrete has cured. These impacts would be minimized by implementation of BMPs GEN-5 through GEN-16.

*Culvert, Storm Drainage, Channel, Bridge, and Roadside Ditches and GI Maintenance. A*s sediment is removed, so is any vegetation that is growing on it, including freshwater and tidal wetland vegetation. Removal of wetland vegetation may result in the loss of propagules for colonization of downstream areas. Additionally, similar to bank stabilization, some culvert, storm drain, channel, bridge, roadside ditch, and GI repair and maintenance activities would require temporary water diversions or dewatering. This activity would result in the temporary loss of aquatic and wetland communities and may result in increased turbidity caused by mobilization of fine sediments. Wetland vegetation also may be damaged by equipment accessing sediment removal sites. Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts. For example, after sediment dredging, disturbed areas along the upper banks of the channel would be revegetated in accordance with BMP GEN-22, though the active flow area would not be actively revegetated.

Vegetation Management. In areas near water bodies, herbicide use is limited to control non-native plant species. Trimming and pruning trees and shrubs are routine activities necessary to provide access to County facilities, improve visibility to inspect County facilities, protect infrastructure, and maintain the designed hydraulic capacity of flood control facilities. Tree removal under the proposed program would be limited, occurring primarily to eliminate public safety hazards along or near County-maintained facilities and to provide access to County facilities; improve visibility to inspect County facilities, protect infrastructure, and maintain the designed hydraulic capacity of flood control facilities; and manage fuel load and fire hazards. Vegetation removal could result in increased scour caused by the loosening of sediment deposits, not only as a result of the removal of vegetation but also from accelerated flows. Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts.

Road and Trail Maintenance. Road maintenance (e.g., re-grading unpaved roads, repair of rolling dips, relocating road surface materials that have moved due to erosion, re-establishing turn around areas for emergency vehicles, and repairing slip-outs/slides) and trail maintenance (e.g., repairing water bars, rolling dips, and drainage ditches to prevent or reduce erosion and downstream sedimentation issues in nearby channels and creeks) activities may result in changes to the extent of wetland and aquatic communities present in a work site if a wetland is present directly adjacent to required road or trail repair. As with the impacts from bank stabilization activities described above wetland vegetation may be lost as a result of mechanical or physical clearing in the work site (including access areas) and

damage to vegetation may occur as a result of crushing by equipment; trampling by personnel; and compaction of soil, which could result in damage to plant roots. The impacts to nearby waters from road and trail repair, however, are expected to be temporary and short in duration and the road repair activities are intended to play a critical role in preventing future impacts on wetlands from erosion and sedimentation. Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts.

Marina Maintenance Activities. Various maintenance activities at the Coyote Point Marina are likely to take place in aquatic habitats or adjacent tidal wetland habitat. These include launch ramp repairs, dock maintenance, marina maintenance (e.g., periodic cleaning and repair of sewer lines and ejector tank cleaning), and sediment removal in the culverts and ditches around the marina. The nature of the impact to wetlands and aquatic communities around the marina from these activities is similar to that described above from the other Maintenance Program activities. Tidal marsh vegetation around the marina at Coyote Point Recreation Area is limited to very narrow strips at the edges of rip-rap. The impacts to wetlands and aquatic communities from marina and shoreline maintenance activities are expected to be temporary and short in duration and maintenance activities are intended to play a critical role in preventing future impacts on wetlands from erosion and sedimentation. Implementation of BMPs, as described under bank stabilization above, would avoid or minimize such impacts

Applicable Best Management Practices

The County would implement the following BMPs during Program activities to reduce impacts on wetlands. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel

- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-19: Dust Management Controls
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

The vast majority of impacts to acreage of wetlands and other waters would be short-term, because aquatic habitats would be maintained despite proposed Program activities (e.g., no loss of aquatic habitat would occur because of any maintenance activity other than, perhaps, bank stabilization). In addition, many vegetated wetland areas would restore themselves within 1 to 2 years following sediment removal or vegetation management. Nevertheless, proposed program activities would result in temporal losses of wetland and aquatic habitat functions and values, possible type conversion of wetlands (e.g., from wetlands dominated by certain plant species to wetlands dominated by others), and potentially permanent losses of wetlands and other waters. Even with BMPs, complete avoidance of fill and water quality degradation cannot be accomplished while still meeting the proposed Program goals.

Thus, in the absence of any mitigation measures, this impact is considered significant because it would result in short-term degradation and temporary and permanent losses of ecologically valuable wetlands and aquatic habitats, including jurisdictional wetlands and other waters (third and fourth significance criteria listed in Section 3.4.3 under "Criteria for Determining Significance"), and temporary disruption of stream continuity during sediment removal activities within the channel. Impacts on special-status animal species resulting from disturbance or loss of wetland and aquatic habitat are addressed in separate impact discussions above. Implementation of **Mitigation Measure BIO-9** would reduce impacts on wetlands and other waters to less-than-significant levels by replacing lost wetlands and aquatic habitats through restoration or by replacing the lost functions and values provided by these habitats through other means, such as non-native plant removal and watershed protection. Mitigation Measure BIO-9 would thus ensure that program activities do not result in a substantial adverse effect on federally protected wetlands or on sensitive wetland and aquatic communities, reducing residual impacts on wetlands and other waters to a level that is **less than significant with mitigation**.

Mitigation Measure BIO-9: Provide Compensatory Mitigation for Impacts on Wetlands and other Waters

By April 30 of each year, the County would notify the relevant regulatory agencies (i.e., those agencies with jurisdictional authority or oversight) of the year's planned maintenance projects. The relevant regulatory agencies would be provided with information describing proposed maintenance project activities, locations, natural

resource conditions, and any other key resource issues. The notification package would describe which ground-disturbing maintenance activities would result in impacts on temporary and permanent impacts on wetlands or waters of the U.S. and state. It would also describe in detail the County's proposal for providing compensatory mitigation for those impacts and may include one or more options described in Chapter 2, Section 2.7.3 and summarized below.

For routine maintenance activities located outside of tidal wetland/other waters habitat within the USACE jurisdiction, the preferred mitigation approach is on-site mitigation. The general on-site mitigation approach is to restore the type of habitat that is impacted by maintenance activities in the same project vicinity or stream reach where the disturbance has occurred. For example, for creek bank stabilization projects, the County would seek to implement biotechnical solutions, as conditions allow, to avoid or minimize the potential hardening of creek banks.

For on-site, in-kind mitigation, the County will restore, preserve, and manage wetlands and aquatic habitats, or substantially improve the quality of highly degraded wetlands and aquatic habitats at a ratio of 1.5:1, meaning 1.5 acres of wetlands or other waters shall be restored/created for every 1 acre of wetlands and other waters permanently impacted by program activities.

Where on-site mitigation is not possible, off-site mitigation can provide opportunities for in-kind mitigation that aligns with the functions and values of natural resources that are potentially impacted by the program but is done at a different location than where the maintenance occurs. The general approach is to conduct off-site mitigation within the same watershed or general region as where the maintenance activities occur. This type of mitigation is similar to the on-site option in that the focus is to provide in-kind habitat enhancement or restoration, stream functional improvement, water quality benefits, or overall watershed health improvements that offset maintenance impacts or reduce the need for maintenance. Several off-site mitigation options are identified in the Maintenance Manual (Appendix A), including future restoration efforts at the San Vicente Creek Enhancement Project, future projects within Pescadero Creek Park, invasive plant and tree removal on Park lands, gully repair and large woody debris implementation projects in the Pescadero-Butano Creek watershed, invasive plant removal at Quarry Park in Half Moon Bay, creek restoration in Junipero Serra County Park, and removal of concrete from El Zanjon Creek.

For off-site, in-kind mitigation, the County will acquire, preserve, enhance, and manage lands that provide similar ecological functions and values to the wetlands and other waters impacted by Program maintenance activities. The acquisition and preservation/enhancement of these higher quality lands will occur at a ratio of 3:1, meaning 3 acres of wetlands or other waters shall be acquired, preserved, and enhanced for every 1 acre of wetlands and other waters impacted by Program activities. Enhancement may include modification of existing management, limited planting, or invasive plant removal, or other activities to enhance wetland/aquatic habitat functions and values.

Other options for compensatory mitigation include establishing conservation easements or deed restrictions, partnering with local San Mateo County based

watershed, stewardship, or non-profit organizations that lead or coordinate habitat restoration or watershed improvement projects, or the purchase of mitigation credits from the San Francisco Bay Wetland Mitigation Bank. For the purchase of mitigation credits mitigation will occur at a ratio of 1:1.

Impact BIO-4: Potential Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites (Less than Significant with Mitigation)

BIO-4A Wildlife Movement (Less than Significant)

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that link these different habitats while also providing cover. On a broader level, corridors also function as avenues along which wide-ranging animals can travel, plants can propagate, genetic interchange can occur, populations can move in response to environmental changes and natural disasters, and threatened species can be replenished from other areas. In the program area, the vegetation communities along streams and rivers often function as environmental corridors. In addition, other natural habitats (e.g., oak woodlands and mixed riparian forest and woodland) and the shorelines of reservoirs function as pathways for terrestrial wildlife movement (e.g., by mammals) that allow animals to move along these areas.

In the absence of BMPs, temporary impediments on movement by aquatic species may result from the dewatering of work sites during proposed maintenance activities. In addition, by creating open areas or patches with unsuitable vegetation types, vegetation management activities could restrict some wildlife species from moving between suitable habitat patches. Noise and disturbance associated with maintenance activities could cause species that commonly use habitats at proposed routine maintenance work sites for dispersal to at least temporarily avoid moving through the site. Although maintenance activities may result in temporary adverse effects on terrestrial wildlife movement, once maintenance activities are complete, wildlife movement conditions would be similar to pre-maintenance conditions, and wildlife dispersal through the program area is expected to return to existing conditions. Sufficient habitat and cover would remain in the maintenance work area following completion of maintenance activities that animals that require cover for dispersal would still be able to disperse across the area.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on wildlife movement. A description of each BMP is provided in Table 2-3 in Chapter 2.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-16: Timing of Work
- BMP DW-1: Channel Dewatering

Conclusion

Although proposed program activities may temporarily affect wildlife movement during maintenance activities, no permanent impacts on wildlife movement would result from the proposed program. Further, because proposed program activities would impact relatively

small amounts of habitat at any one maintenance site, and only for short periods, temporary impacts on wildlife movement are not expected to rise to the level of a substantial impact. Thus, with implementation of BMPs, the proposed program would not interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors; this impact would be **less than significant**.

BIO-4B: Non-special-status Birds (Less than Significant)

Creek Bank Stabilization; Culvert Storm Drainage, Channel, Bridge, and Ro*adside Ditches and GI Maintenance; Vegetation Management; Road and Trail Maintenance; and Marina Maintenance*. No obvious, large-scale nursery sites, such as heron or egret rookeries or nesting bird colonies known to support large numbers of breeding birds, are known to be present at areas anticipated routine maintenance sites (see Appendix A). Some bird species nest in and adjacent to anticipated routine maintenance sites. Thus, in the absence of BMPs, implementation of maintenance activities has the potential to result in the injury or mortality of common birds, especially eggs or young in nests. Such impacts may occur as a result of vegetation removal or the disturbance of individuals nesting within or immediately adjacent to proposed maintenance work areas. In the absence of BMPs, burning vegetation debris could potentially result in burning of active nests within burn piles or uncontained spread of fire that could impact nests or habitat in adjacent areas. In addition, implementation of maintenance activities (e.g., vegetation management) would result in a small, temporary loss of nesting and foraging habitat for common native birds.

Implementation of BMPs would help to avoid and minimize such impacts on nesting birds. General BMPs, which tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects, include BMPs GEN-1, 2, 3, 5, 6, 7, 9, 10, 12, 13, 14, 15, 16, 21, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would minimize impacts on aquatic nesting habitat due to erosion and sedimentation. Implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of nesting birds, and BMP BIO-23 would minimize the potential for impacts from burning of vegetation. Further, BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds through the identification of active nests and implementation of non-disturbance buffers around such nests.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on nesting birds and their habitats. A description of each BMP is provided in Tables 2-3 and 2-5 in Chapter 2.

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-9: Measures to Protect Nesting Migratory Birds
- BMP BIO-23: Burn Piles
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials

- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-21: Domestic Animals

Conclusion

The habitats affected by proposed program activities represent a very small proportion of the habitats that support nesting birds regionally. Although fewer pairs of birds may nest and forage in proposed activity areas immediately following vegetation management activities due to the small temporary loss of nesting and foraging habitat, the decline in bird abundance resulting from habitat loss is expected to be very low because most trees would be retained and vegetation would regrow. Thus, this impact would be **less than significant**, even in the absence of implementation of BMPs. Nevertheless, BMP BIO-9 would be implemented to specifically avoid and minimize impacts on nesting birds, through the identification of active nests and implementation of non-disturbance buffers around such nests. The other BMPs identified above would further minimize impacts on nesting birds.

BIO-4C: Non-special-status Bats (Less than Significant with Mitigation)

Common bat species are colonial species; impacts on a colony of bats may be an impact on a substantial proportion of the local population. Colonies of Brazilian free-tailed bats (*Tadarida brasiliensis*), big brown bats (*Eptesicus fuscus*), Yuma myotis (*Myotis yumanensis*), California myotis (*Myotis californicus*), and possibly other species may be present in trees, bridges, or rock crevices or under exfoliating tree bark in the vicinity of anticipated routine maintenance sites.

Proposed tree removal would have the potential to result in impacts on non-special-status bats. Loss of a small colony (i.e., fewer than 10) of non-special-status bats would not result in a substantial impact on regional populations because of the regional abundance of these species (e.g., in comparison to the special-status pallid bat); however, loss of multiple colonies, or of a particularly large colony, of these non-special-status bats may substantially affect regional populations of any of them. Unlike the case with the pallid and Townsend's big-eared bats described in Impact BIO-1CC above, suitable roost sites for non-special-status bats are expected to be widespread enough that the loss of a roost site resulting from proposed program activities would not result in a substantial reduction in suitable roosts on a regional scale.

Implementation of BMPs GEN-1 and GEN-2 would avoid or minimize impacts on roosting bats by establishing work areas outside of sensitive habitats and limiting work to the smallest area necessary. In addition, implementation of BMP BIO-1 would minimize impacts through environmental awareness training of maintenance personnel regarding the sensitivity of roosting bats. Further, BMP BIO-14, which includes preconstruction surveys, avoidance of active roosts if feasible, buffers around active nests, and seasonal work windows for disturbance of roost trees that cannot be avoided would be implemented to specifically avoid and minimize impacts on roosting bats.

Applicable Best Management Practices

- BMP BIO-1: Environmental Awareness Training
- BMP BIO-14: Measures to Protect Bat Colonies
- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance

Conclusion

Program activities are not expected to result in a substantial reduction in suitable roosts (on a regional scale) for common bat species. Therefore, the loss of roost sites used by common bat species would be a less-than-significant impact. Implementation of BMPs would avoid the loss of individuals in large colonies of common bats so that this impact is **less than significant**.

Impact BIO-5: Conflict with Local Policies or Ordinances Protecting Biological Resources, or Conflict with the Provisions of an Adopted Habitat Conservation Plan or Natural Community Conservation Plan (Less than Significant)

Conflict with the Local Tree Ordinance (Less than Significant)

The majority of proposed program activities would occur in unincorporated San Mateo County or in County parks where the County would not be required to comply with local ordinances. However, there is a possibility that proposed program activities may require work beyond County owned land or County right-of-way such that loss of protected trees as defined by local ordinances (see Section 3.4.2) could occur. The County would comply with all such ordinances, including obtaining a permit from the necessary jurisdictions to remove protected trees and complying with the conditions of such permits (including paying any applicable fees). Therefore, impacts related to conflict with local policies or ordinances protecting trees would be less than significant.

Conflict with an Adopted Habitat Conservation Plan or Natural Community Conservation Plan (No Impact)

No NCCPs are applicable to the proposed program. One approved HCP is located within the program area – as described in Section 3.4.2, the San Bruno Mountain HCP serves as the implementation plan for managing and monitoring activities focused on protecting approximately 1,290 acres of land for the mission blue, callippe silverspot, and San Bruno elfin butterfly populations in the City of San Bruno, City of Brisbane, Daly City, South San Francisco, and San Mateo County. Routine maintenance activities that occur within the San Bruno Mountain HCP area are not covered by the HCP. Further, the Program includes BMPs to avoid and minimize impacts from maintenance activities on the species covered by the HCP. Therefore, the Program would not conflict with the HCP.

Conflict with Local Coastal Program (Less than Significant)

As described in Section 3.4.2, all development planned in the Coastal Zone requires either issuance of a Coastal Development Permit or a Coastal Development Permit Exemption. The County would comply with the LCP by obtaining a permit or exemption for all Program

activities that are planned within the Coastal Zone and complying with all applicable permit conditions. Therefore, impacts related to conflict with the LCP would be less than significant.

Applicable Best Management Practices

None applicable.

Conclusion

As described above, proposed program activities would not result in conflicts with local policies, ordinances, or an adopted HCP or NCCP. This impact would be **less than significant**.

Impact BIO-6: Be Located inside or within 200 Feet of a Marine or Wildlife Reserve (Less than Significant with Mitigation)

The proposed program includes maintenance activities that would occur within the Fitzgerald Marine Reserve (Reserve) (see Appendix A), which is considered a sensitive habitat under the San Mateo County General Plan (County of San Mateo 1986). The proposed program would not result in a reduction in size of the Reserve, but in the absence of BMPs, maintenance activities could result in the degradation of conditions within the Reserve, including adverse effects due to increases in erosion, leaks of petrochemicals, hydraulic fluids, and solvents, spread of invasive plant species, and temporary or permanent loss of wetlands or other sensitive habitats (see Impacts BIO-2 and BIO-3).

The County would implement a number of BMPs to address the impacts of Program activities on the Reserve. General BMPs tend to minimize the footprint of work activities and minimize impacts from staging, stockpiling of materials, spills or leaks of chemicals, and other adverse effects. Relevant general BMPs include BMPs GEN-1, 3, 5 through 16, 19, and 22. In addition, BMPs EC-1 through EC-13 and SC-1 through SC-6 would be implemented to reduce maintenance activity impacts due to erosion and sedimentation.

Applicable Best Management Practices

The County would implement the following BMPs during program activities to reduce impacts on marine and wildlife reserves. A description of each BMP is provided in Table 2-3 in Chapter 2.

- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking

- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removal
- BMP GEN-16: Timing of Work
- BMP GEN-19: Dust Management Controls
- BMP GEN-22: Site Stabilization
- BMPs EC-1 through EC-14: Various methods of erosion control
- BMPs SC-1 through SC-6: Various methods of sediment/water quality control

Conclusion

Implementation of BMPs would avoid or minimize the majority of impacts on marine and wildlife reserves. Nevertheless, residual impacts may remain because avoidance and permanent loss on sensitive habitats (e.g., wetlands) may not be feasible. Implementation of Mitigation Measures BIO-8 and BIO-9 would reduce the impact on marine and wildlife reserves to a less-than-significant level by compensating for residual impacts on riparian and wetland habitats. This impact would be **less than significant with mitigation.**

Impact BIO-7: Result in Loss of Oak Woodlands or other Non-Timber Trees (Less than Significant)

Under the California Oak Woodland Conservation Act, the State formally recognized the role of oak woodlands as wildlife habitat, erosion control, and sustaining water quality. Effective January 2005, the State amended CEQA with the addition of Public Resources Code 21083.4, which requires that counties consider the significance of oak woodland conversions under CEQA and adopt an oak woodland management plan pursuant to the Oak Woodlands Conservation Act that contains measures to minimize impacts to oak woodlands along riparian zones, near wetlands and those that contain snags or other features used by wildlife. If significant impacts are determined under CEQA, mitigation alternatives may include conserving oaks through the use of conservation easements (2:1 ratio, conserved to impacted), restoration of former oak woodland area (2:1 ratio), contribution to the Oak Conservation Fund established under CDFW, or other mitigation measures developed by the counties.

Although maintenance activities could affect some individual oaks and may have minor impacts on oak woodland, the proposed program would not result in a conversion of oak woodland to some other type. Maintenance activities could impact oaks through the spread of *Phytophthora,* which is responsible for Sudden Oak Death. However, implementation of

BMP BIO-24 would minimize the potential impacts from plant pathogens. Therefore, impacts resulting in loss of oak woodlands or other non-timber trees would be **less than significant**.

3.5 Cultural Resources

This section describes the existing conditions related to cultural resources in the program area and presents the County of San Mateo Routine Maintenance Program's (proposed program's) potential effects on cultural resources. It also describes federal, state, and local regulations related to cultural resources applicable to the proposed program.

Cultural resources include prehistoric and historic-era archaeological sites; tribal cultural resources (TCRs) or traditional cultural properties (TCPs); and historic-era buildings, structures, landscapes, districts, and linear features. Prehistoric archaeological sites are places where Native Americans lived or carried out activities during the prehistoric period, which is generally defined as before the 1760s in the program area. Historic-era archaeological sites reflect the activities of people after initial exploration and settlement in the region during the late 1700s. Native American sites can also reflect the historic era. Prehistoric and historic-era sites may contain artifacts, cultural features, subsistence remains, and/or human burials. TCRs are sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe; TCRs are discussed in Section 3.15, *Tribal Cultural Resources*, of this DEIR. TCPs can include TCRs, but they also encompass resources that are culturally important to any community.

3.5.1 Environmental Setting

Prehistory

The prehistory of the program area reflects information known about the indigenous population from the time the region was first populated with humans until the arrival of the first Europeans who visited and recorded their journeys through the written record. The prehistoric record is derived from more than a century of archaeological research; however, while much has been gleaned from these studies, large gaps in the data record remain. The following prehistoric culture sequence, derived from Milliken et al. (2010:114-118), briefly outlines the prehistory of the San Francisco Bay region.

The *Paleoindian Period* (11,500–8000 B.C.) was characterized by big-game hunters occupying broad geographic areas. Although it is widely believed that the San Francisco Bay was likely inhabited by at least 10,000 B.C., evidence of this occupation has not yet been discovered. Geological forces, including erosion, siltation, and sea level rise, have all likely contributed to the lack of evidence of ancient sites in the region.

The *Early Holocene Period* (or *Lower Archaic Period*; 8000–3500 B.C.) is considered a time when populations continued to be very mobile, as they practiced a foraging subsistence pattern around the region. Artifacts that characterize this period include the milling slab and

handstone[1] to process seeds, as well as large wide-stemmed and leaf-shaped projectile points.

The *Early Period (*or *Middle Archaic Period*; 3500–500 B.C.) is marked by the appearance of cut shell beads in the archaeological record, as well as the presence of the mortar and pestle for processing acorns. House floors with postholes indicate substantial living structures, which suggests a move toward establishing a more sedentary lifestyle.

The *Middle Period*, which includes the *Lower Middle Period* (or *Initial Upper Archaic Period*; 500 B.C. to A.D. 430), and *Upper Middle Period* (or *Late Upper Archaic Period*; A.D. 430–1050), appears to be a time when geographic mobility may have continued, although groups began to establish longer term base camps in localities from which a more diverse range of resources could be exploited. The first rich black middens are recorded from this period. The addition of milling tools, obsidian and chert concave-base projectile points, and the occurrence of sites in a wider range of environments suggest that the economic base was more diverse. By the *Upper Middle Period*, mobility was being replaced by the development of numerous small villages. Around A.D. 430 a "dramatic cultural disruption" occurred, as evidenced by the sudden collapse of the *Olivella* saucer bead trade network.

The *Initial Late Period* (or *Lower Emergent Period*; A.D. 1050–1550) reflects a social complexity that had developed toward lifeways of large central villages with resident political leaders and specialized activity sites. Artifacts associated with this period include the bow and arrow, small corner-notched projectile points, and a diversity of beads and ornaments.

The *Terminal Late Period (*or *Upper Emergent Period;* A.D. 1550–circa 1750) generally represents the indigenous cultures that were encountered by the Spanish explorers when they first arrived in San Francisco Bay. This social complexity continued to develop from the previous period, as trade relations appear to have shifted and regional sub-cultures emerged.

San Mateo County

Present day San Mateo County was intensively occupied throughout the prehistoric periods discussed above, due to the variety and proximity of resources from the San Francisco Bay, the interior foothills and valleys, and the Pacific Ocean, and relatively easy access to these areas. Given these diverse ecological characteristics of the San Francisco Peninsula, large populations of people were able to establish their residential communities among three principal environmental zones: tidal marshland, grassland prairie, and oak woodland habitats. Riparian corridors, including small creeks and springs, meandered through these ecological communities and supplemented the subsistence patterns and settlement habits during the prehistoric periods. As a result of these favorable conditions, archaeological sites are well-documented in all portions of the county.

Research in the San Mateo County region suggests that the area was inhabited as early as 5,400 years Before Present (BP), and was likely associated with a pre-Ohlone/Costanoan, possibly Esselen, population (Clark 1989). Some of the most notable investigations have been

[1] Handstones, also referred to as manos, are hand-held stone tools used to grind foodstuffs, primarily seeds. These tools were often ground into a loaf shape to fit comfortably in the hand, although unshaped stones could also be used as handstones.

conducted up and down the San Francisquito Creek watershed, which yielded data suggesting an annual settlement system along the western side of the Bay (Bocek 1992).

Ethnography

The population indigenous to the program area spoke a language referred to as Costanoan, a derivative from a Spanish term for "coast people." Costanoan, which consisted of six known languages and various dialects within those languages, was spoken over a broad territory that included all of the San Francisco Peninsula, along the east and south of San Francisco Bay, and south to Monterey Bay, Salinas Valley, and the area around Hollister. Those residing in San Francisco Peninsula and the program area spoke the Ramaytush dialect of San Francisco Bay Costanoan (Milliken et al. 2009:33-35).

The Costanoan peoples, also referred to as the Ohlone, Mutsun, or Rumsen, depending on geography, were not a united cultural or political entity (Milliken et al. 2009:2-4). Rather, there were strong differences not only in language, but also in culture, between the San Francisco and Monterey Bay occupants. Political affinity was based on the tribelet, which was comprised of one or more villages within a specific geographic territory (Levy 1978:487).

The tribelet territory was 10–12 miles in diameter and contained a population of 200–400 people living among four or five villages (Milliken et al. 2010:99). Those living in the program area resided in large villages along permanent streams in locations that allowed access to the diverse resources found in the tidal marshlands, the valley floor, and the hills (Milliken et al. 2010:106; Moratto 2004:225).

Seven local Costanoan tribes lived entirely within modern-day San Mateo County. Along the bay were the *Urebure* of San Bruno, the *Ssalson* in San Mateo and the *Lamchin* at Redwood City. The coastal groups included the *Arama*i in San Pedro Valley, the *Chiguan* in Half Moon Bay, the *Cotegen* along Purisima Creek, and the *Oljon* at San Gregorio. Three other tribes were partially in San Mateo County but also spilled over into more southern counties. These included the *Puichun* who were on the Bay front at San Francisquito Creek, and the *Olpen* who lived in the mountains above the *Puichun* at the headwaters of San Francisquito Creek. The third group, the *Quiroste*, lived on the coast in the area of Point Año Nuevo (Milliken et al. 2009:87-89). Numerous village locations throughout San Mateo County have been identified for some of these groups (Milliken et al. 2009:4-5).

History

The historic era began in the San Francisco Bay area when Spanish explorers arrived in the late 1760s and the 1770s. Members of the Portola expedition were the first to arrive in present-day San Mateo County. On October 23, 1769, the party entered the Quiroste village of Mitenne, where they were graciously welcomed. Portola's group continued northward, encountering and staying at villages of all the Peninsula tribes as they crossed to the Bayside of the Peninsula via Sweeny Ridge and camped near Palo Alto. The party retraced their route back to Monterey. The Rivera-Palou expedition followed Portola's exploration five years later in 1774. Instead of coming up the coast, the Rivera-Palou party arrived through Santa Clara Valley, and followed along the Bay shore to San Francisquito Creek. The team made their way to the north end of the Peninsula before returning to Monterey via the coastal route. The Anza-Font expedition came to the Peninsula, again passing through San Mateo County and engaging local tribes, in the spring of 1776 to establish the Mission Dolores (Mission San Francisco de Asís) and the San Francisco Presidio, which were founded at the north end of

the Peninsula in June of 1776. By 1793, the northern and central Peninsula was no longer inhabited by tribal villages and the local San Francisco Bay Costanoan-speaking local tribes of the area had been absorbed into Mission Dolores (Milliken et al. 2009).

Mexico, which included California, became independent from Spain in 1822, and after that time, the government began issuing grants of land to favored citizens. First granted only to Mexican nationals, these tracts of land were soon bestowed upon those outsiders (largely Americans) who agreed to become citizens (Kyle et al. 2002:xiii-xiv). During Mexican rule, at least 20 tracts of land, or Ranchos, were granted within what was to become San Mateo County (California State Lands Commission 1982). Nine of the ranchos (one of which overlaps into San Francisco County, and one into Santa Cruz County) were stretched out along the Pacific coast, three were entirely within the interior mountains, and the remainder bordered the San Francisco Bay. These properties were largely used for cattle grazing, agriculture, or timber harvesting, though the operations also attracted settlers who would purchase small tracts of land in order to establish their own livelihoods. Central settlements eventually became established on many of the ranchos, particularly on the Bayside, that are the sites of modern-day communities (Kyle et al. 2002). Some of the County's parks contain elements of the ranchos, such as the Sanchez Adobe, which was the home of Don Francisco Sanchez at Rancho San Pedro in Pacifica (County of San Mateo 2019). The Woodside Store and other County parks possess elements of mid-nineteenth century life or are within former rancho lands.

After California became part of the United States, San Mateo County was formed in 1856 out of the southern portion of San Francisco County (Marschner 2000). Given the rugged nature of the terrain in San Mateo County, with densely forested areas and rocky shorelines, the area retained its rural character throughout its history. The economy of the area was principally water supply and lumber for San Francisco's development—especially following the 1906 earthquake. By 1870, there were over 30 sawmills in the county (Marschner 2000). Much of the San Andreas Valley was flooded in order to provide a water supply to further help with the development of San Francisco. With the development of railway connections to San Francisco in the later 1800s, many wealthy San Franciscans built summer homes in San Mateo County, which, in turn, encouraged the development of economies to support these large mansions.

By the middle of the 20th century, the wartime industry provided jobs and a fledgling local economy. At this time, San Mateo County became a focal point of the electronics industry. The economy and population continued to grow during the mid-20th century. Post–World War II growth fueled the creation of the Interstate Highway system and dense suburbs typical of many parts of modern San Mateo County. The modern economy in San Mateo County is predominately information and technology driven, with the population being mostly employed by the major technology companies, like Google and Facebook. The median household income is more than $100,000 and the median property value is $1 million.

Area of Potential Effects

An area of potential effects (APE) will be established for individual projects conducted under the program that require a field investigation. The APE will encompass the project's the area of direct impact and a 50-foot buffer, as well as all construction staging areas, and access improvements.

Records Search Results

A records search of the entire geographic area representing San Mateo County was conducted at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University in October 2018 (NWIC File No. 18-1001). The purpose of the record search was to provide baseline information about the number of recorded cultural resources within the program area in order to ascertain the general sensitivity of the region for cultural resources. Appendix I (confidential) of the Maintenance Manual (Appendix A of this DEIR)) provides a list of the sites and mapping. The NWIC information has largely been derived from study results filed at the Information Center and is not necessarily a comprehensive reflection of all cultural resources work conducted in the county. It is important to note that a vast majority of the waterways and roads included in the program area have not been completely surveyed for archaeological resources. The database was queried for only archaeological sites, both historical and prehistoric, and did not select for historic buildings or structures (although some structural sites were listed because they contain multiple types of historic material at the location of the recorded site).

The record search revealed that 441 archaeological resources have been recorded in the program area. These include 313 Native American sites, 93 historic era sites and 35 sites that include both Native American and historic era remains. Not surprisingly, these resources are recorded throughout the entirety of the program area; however, they tend to cluster in areas in proximity to the historic shoreline of the San Francisco Bay and Pacific coast, as well as some upland sites focused on resource processing and procurement.

Similarly, many historic-period resources have been recorded throughout the program area. These resources date back to the early 1800s and Spanish mission expansion, and largely relate to early ranching and farming efforts.

The sensitivity of the program area for cultural resources is further supported by a review of the California Office of Historic Preservation's web page of California Historical Resources (2020), which lists 121 resources for San Mateo County. These include resources listed in the National Registry of Historic Places (NRHP) (49), as a State Landmark (37), and as a State Point of Interest (35). While a large percentage of these resources are buildings that would not be affected by the Program, many are located adjacent or in close proximity to streams or roads. However, many of the listed properties are Native American archaeological sites, such as the mounds at Pillar Point. Others are places of historical significance related to the early Spanish exploration, such as the Anza Expedition camp sites, which are located near San Mateo Creek, and signify where Captain J. B. de Anza camped March 29, 1776, after exploring the Peninsula and selecting the sites for the Mission and Presidio of San Francisco.

A review of the California Department of Transportation (Caltrans) lists of historical bridges (Caltrans 2018 and 2020) identified six bridges within the program area, and under County jurisdiction, that have been either listed or are eligible for listing on the NRHP (**Table 3.5-1**). Five of the bridges are on County roads, and one is on State Route 92. All of the bridges are stone masonry structures constructed in the late 19th and 20th centuries.

Table 3.5-1. San Mateo County NRHP-Eligible or Listed Bridges

Bridge No.	Date Built	Bridge Name	Eligibility Status	Location
35-0054	1967	San Mateo-Hayward Bridge	Eligible for NRHP	04-SM-092-R14.44-
35C0025	1900	Pilarcitos Creek	Listed on the NRHP	0.25 Miles South of State Route 92
35C0018	1937	Pescadero Creek	Eligible for NRHP	2 Miles East of Butano Cutoff
35C0053	1937	Pescadero Creek	Eligible for NRHP	3 Miles East of Butano Cutoff
35C0122	1900	Bear Creek	Eligible for NRHP	0.3 Miles South of State Highway 84
35C123	1905	West Union Creek	Eligible for NRHP	0.05 Miles E Tripp Road

Native American Consultation

The County contacted six Native American tribes about the proposed program. Details about Native American consultation efforts are reported in Section 3.15, *Tribal Cultural Resources*.

3.5.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

National Historic Preservation Act Section 106

The National Historic Preservation Act (NHPA) of 1966, as amended, requires federal agencies to consider the preservation of historic and prehistoric resources. The NHPA authorizes the Secretary of the Interior to expand and maintain the National Register of Historic Places (NRHP), and established an Advisory Council on Historic Preservation (ACHP) as an independent federal entity. Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on significant cultural resources, which are referred to as *historic properties*, and afford the ACHP a reasonable opportunity to comment on the undertaking before licensing or approving the expenditure of funds on any undertaking that may affect properties listed, or eligible for listing, in the NRHP.

Federal review of projects is normally referred to as the Section 106 process. The Section 106 review normally involves a four-step procedure described in detail in the implementing regulations (36 Code of Federal Regulations [CFR] Part 800):

- Initiate the Section 106 consultation process by notifying the appropriate consulting parties. Consultation is between the federal agency, the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer, and other consulting parties including but not limited to the ACHP, certified local governments, and members of the general public with an economic, social or cultural interest in the project.
- Identify properties that could be affected by the project and determine if they are listed in, or eligible for listing in the NRHP, in consultation with the SHPO and interested parties;

- Assess the effects of the undertaking on properties that are eligible for inclusion in the NRHP in consultation with the SHPO; and
- Resolve adverse effects by developing and evaluating alternatives that could avoid, minimize, or mitigate impacts on historic resources. Consult with the SHPO, other agencies, and interested parties to develop an agreement (Memorandum of Agreement or Programmatic Agreement) that addresses the treatment of historic properties and notify the ACHP.

Advisory Council on Historic Preservation Regulations, Protection of Historic Properties

The ACHP's *Regulations, Protection of Historic Properties* (36 CFR Part 800) establish procedures for compliance with Section 106. These regulations define the criteria of adverse effect, define the role of the SHPO in the Section 106 review process, set forth documentation requirements, and describe procedures to be followed if significant historic properties are discovered during implementation of an undertaking. Historic properties must be considered in project planning and construction. The responsible federal agency must submit any proposed undertaking that may affect NRHP-eligible properties to the SHPO for review and comment before the project's approval.

Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines

Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines (190 FR 44716–44742) offers non-regulatory technical advice about the identification, evaluation, documentation, study, and other treatment of cultural resources. Notable in these guidelines are the "Standards for Archaeological Documentation" (p. 44734) and "Professional Qualifications Standards for Archaeology" (pp. 44740–44741).

Section 106 prescribes specific criteria for determining whether a project would have an adverse effect on a historic property, if any such properties exist in the APE as defined by the agency (36 CFR § 800.5). An impact is considered adverse when prehistoric or historic archaeological sites, structures, districts, or objects listed in or eligible for listing in the NRHP are subjected to the following effects:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property that causes its deterioration; and
- Transfer, lease, or sale of the property.

Because the County would need to obtain a permit from U.S. Army Corps of Engineers (USACE) under the Clean Water Act (CWA) Section 404 for some of the proposed actions, the

proposed program constitutes a federal undertaking that would require compliance with Section 106 of the NHPA, and federal significance criteria apply. For federally permitted or funded projects, cultural resource significance is evaluated in terms of eligibility for listing in the NRHP. NRHP criteria for eligibility are defined as follows:

The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and that:

- Are associated with events that have made a contribution to the broad pattern of our history;
- Are associated with the lives of people significant in our past;
- Embody the distinct characteristics of a type, period, or method of construction, that represent the work of a master, that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or are likely to yield, information important in prehistory or history.

State Laws, Regulations, and Policies

California implements the NHPA through its statewide comprehensive cultural resource surveys and preservation programs. The California Office of Historic Preservation (OHP), an office of the California Department of Parks and Recreation (DPR), implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historical Resources Inventory. The SHPO is an appointed official who implements historic preservation programs within the State's jurisdictions as well as serving as a consulting party in the federal process described above.

California Register of Historical Resources

The California Register of Historical Resources (CRHR) is an authoritative listing and guide to be used by state and local agencies, private groups, and citizens in identifying the existing historical resources of the state and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change (California Public Resources Code [PRC] Section 5024.1[a]).

The eligibility criteria for inclusion on the CRHR are based on NRHP criteria (PRC § 5024.1[b]). Certain resources are determined by the statute to be automatically included in the CRHR, including historic properties formally determined eligible for, or listed in, the NRHP. Cultural resources eligible for listing in the CRHR are referred to as *historical resources*.

To be eligible for the CRHR, a prehistoric or historic-period resource must be significant at the local, state, and/or federal level under one or more of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

- It is associated with the lives of persons important in our past;
- It 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,
- It has yielded, or may be likely to yield, information important in prehistory or history.

For a resource to be eligible for the CRHR, it must also retain enough of its character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. A historical resource that does not retain sufficient integrity to meet the NRHP criteria may still be eligible for listing in the CRHR.

The CRHR consists of resources that are listed automatically, as well as those that must be nominated through an application and public hearing process. The CRHR automatically includes the following:

- California properties listed on the NRHP and those formally determined to be eligible for the NRHP;
- California Historical Landmarks from No. 770 onward; and
- California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Resources Commission for inclusion on the CRHR.

Other resources that may be nominated to the CRHR are:

- Historical resources with a significance rating of Category 3 through 5 (i.e., properties identified as eligible for listing in the NRHP, the CRHR, and/or a register maintained by a local jurisdiction);
- Individual historical resources;
- Historical resources contributing to historic districts; or
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as a historic preservation overlay zone.

California Environmental Quality Act

The California Environmental Quality Act (CEQA), as codified at PRC Sections 21000 *et seq.*, requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources. As defined in Section 21083.2, a "unique" archaeological resource is an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; and

- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, the State CEQA Guidelines define historical resources as: (1) a resource in the CRHR; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (3) any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 would apply. If an archaeological site does not meet the State CEQA Guidelines criteria for a historical resource, then the site is to be treated in accordance with the provisions of PRC Section 21083 regarding unique archaeological resources. The State CEQA Guidelines note that if a resource is neither a unique archaeological resource nor a historical resource, the effects of a project on that resource shall not be considered a significant effect on the environment (State CEQA Guidelines Section 15064[c][4]). CEQA's thresholds of significance for cultural resources are defined in Section 5.3.5 below.

California Public Resources Code and California Administrative Code

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. Impacts include intentional disturbance, mutilation, or removal of interred human remains.

Local Laws, Regulations, and Policies

Appendix C includes applicable goals and policies in General Plans for jurisdictions where maintenance activities may occur within San Mateo County.

3.5.3 IMPACT ANALYSIS

Methodology

This analysis relies on standard professional practice for the assessment of proposed program impacts on cultural resources. CEQA requires project proponents to assess a project's potential effects on historical resources (i.e., those that are listed or eligible for listing in the CRHR or in a local register or survey that meets the requirements of PRC Sections 5020.1[k] and 5024.1[g]). This entails the following steps:

- Identify potential historical resources.
- Evaluate the significance of identified historical resources.
- Evaluate the anticipated effects of a project on all historical resources.

A Cultural Resources Assessment Report (Horizon 2019) was prepared in support of this DEIR. The report characterizes the variety of cultural resources expected within the Program

area and identifies areas within Department of Public Works 's (DPW's) and Parks' jurisdiction that are sensitive for the presence of cultural resources. The report also identifies the kinds of work activities that could impact cultural resources and provides best management practices (BMPs) and recommended mitigation measures to avoid impacts to cultural resources from these activities. Furthermore, the document identifies the kinds of activities that would be exempt from the consideration of impacts.

Thresholds of Significance

Based on Appendix G of the State CEQA Guidelines and the County's environmental checklist, the proposed program would result in a significant impact on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource pursuant to State CEQA Guidelines Section15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource under State CEQA Guidelines Section 15064.5; or
- Disturb any human remains, including those interred outside of dedicated cemeteries.

Environmental Impacts

Impact CUL-1: Adverse Change in Significance of Historical or Archaeological Resources (*Less than Significant*)

As previously discussed, 121 resources are currently listed on the California Office of Historic Preservation's webpage of California Historical Resources for San Mateo County, including 49 listed on the NRHP, 37 listed as a State Landmark, and 35 identified as a State Point of Interest. These resources are listed on the CRHR, as well. Furthermore, some of the 22 parks operated by the county include locations related to the County's historical past (e.g., Sanchez Adobe, Woodside Store). It is possible that some of these significant resources are in, or close proximity to, proposed anticipated routine maintenance sites (listed in Appendix A of this DEIR) or locations that could be subject to maintenance in the future. Additionally, not all of the areas under the jurisdiction of the program have been surveyed for cultural resources; therefore, unknown archaeological and built environment resources that could be eligible for the CRHR/NRHP are likely located within the program area. Furthermore, not all significant archaeological sites are visible on the ground surface and may be present in areas under the jurisdiction of the County.

Both known and unknown cultural resources have the potential to be impacted by proposed program activities, particularly those that involve ground disturbance. Those actions that are most likely to cause impacts to archaeological resources include, but are not limited to:

- Culvert replacement
- Bridge maintenance
- Sediment removal
- Creek bank stabilization
- Road and trail slip-out and slide repairs

- Given the restricted nature of the program activities, there is less potential to impact built environment resources. Implementation of the BMPs described below would reduce the potential for proposed program activities to adversely affect historical or archaeological resources. The BMPs provide for the identification of historical resources during Annual Work Plan development, consultation with Native American tribes, development of avoidance or mitigation measures if historical resources are present, monitoring in areas of high sensitivity, annual educational training for construction personnel, and protocols for treating unanticipated discoveries found during implementation of maintenance activities.

Applicable Best Management Practices

The County would implement the following BMPs prior to conducting ground-disturbing work that could potentially impact significant cultural resources. A description of each BMP is provided in Table 2-4 in Chapter 2.

- BMP CUL-1: Review Cultural Resources Sensitivity Map Data and County Baseline Maps to Determine if the Work Area Has Been Subject to a Previous Cultural Resource Study
- BMP CUL-2: Record Search and Field Inventory for Highly or Moderately Sensitive Areas (Sensitivity Ratings 3-5), and Areas of Unknown Sensitivity
- BMP CUL-4: Construction Monitoring
- BMP CUL-5: Conduct Pre-Maintenance Educational Training
- BMP CUL-6: Address Discovery of Cultural Remains or Historic or Paleontological Artifacts Appropriately

Conclusion

With implementation of the above-listed BMPs, impacts on historical or archaeological resources would **less than significant**.

Impact CUL-2: Disturbance of Human Remains (*Less than Significant*)

No locations with human remains are currently known to exist on lands under County jurisdiction; however, burials may be identified during the course of pre-maintenance surveys or discovered as the result of ground-disturbing activities, such as those listed under Impact CUL-1. Implementation of the BMPs described below would reduce potential disturbance of human remains.

Applicable Best Management Practices

The County would implement the following BMPs prior to conducting ground-disturbing work that could potentially disturb human remains. A description of each BMP is provided in Table 2-4 in Chapter 2.

- BMP CUL-1: Review Cultural Resources Sensitivity Map Data and County Baseline Maps to Determine if the Work Area Has Been Subject to a Previous Cultural Resource Study

- BMP CUL-2: Record Search and Field Inventory for Highly or Moderately Sensitive Areas (Sensitivity Ratings 3-5), and Areas of Unknown Sensitivity
- BMP CUL-4: Construction Monitoring
- BMP CUL-5: Conduct Pre-Maintenance Educational Training
- BMP CUL-6: Address Discovery of Cultural Remains or Historic or Paleontological Artifacts Appropriately

Conclusion

With implementation of the above-listed BMPs, potential impacts on human remains would **less than significant**.

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3.6 GEOLOGY, SOILS, AND SEISMICITY

This section discusses existing conditions and evaluates the County of San Mateo Routine Maintenance Program's (proposed program's) effects related to geology, soils, seismicity, and paleontological resources. It also describes applicable federal, state, and local regulations related to geology, soils, seismicity and paleontological resources. This evaluation is primarily based on a review of published geologic maps (Wagner et al. 1991), soil survey information (U.S. Department of Agriculture, Natural Resources Conservation Service [NRCS] 2019), and earthquake hazard mapping published by the California Department of Conservation [CDOC] and U.S. Geological Survey [USGS] (CDOC 2010).

3.6.1 ENVIRONMENTAL SETTING

Regional Geology

Geologic conditions throughout San Mateo County are driven by tectonic movements along the San Andreas Fault Zone. Tectonic forces along this right-lateral strike-slip fault zone result in tremendous sheer stress and block faulting between the San Andreas and Hayward fault zones. Deformation and uplift of the restraining fault blocks created the Santa Cruz Mountains and East Bay Hills, while releasing or dropping blocks resulted in the San Francisco Bay Basin between the two ranges. Local cycles of uplift, strike-slip motion, and erosion, in addition to coastal processes on the areas of the County draining to the Pacific Ocean (Coastside) and estuarine processes on the areas of the County draining to San Francisco Bay (Bayside), occurring over thousands of years, formed the landscapes of today. The geology of the program area is shown in **Figure 3.6-1** and further described below.

Santa Cruz Mountains/Headwaters and Upper Watersheds

Geology of the mountainous region of the Santa Cruz Mountains and upper watershed areas is generally characterized as a series of parallel bands of northwest trending geologic units often separated by well identified faults. Numerous periods of extensive folding, faulting, volcanism, deposition, and erosive forces yield a complex arrangement of underlying geologic units and stratigraphic relationships throughout the mountain range. This portion of the Santa Cruz Mountains is an area of active tectonic deformation characterized by steep hillside terrains, frequent earthquakes, and fractured and weathered bedrock. The northwest trending San Andreas fault zone (near the eastern boundary of the region) and San Gregorio fault zone (near western boundary of the region), as well as the inactive, west trending Butano Fault and Zayante-Vergeles fault zone, reveals major fracture zones between fault blocks (Wagner et al. 1991). This continuing cycle of asymmetrical rotation, deformation, and uplift exposed underlying marine sedimentary layers to the effects of erosion. Varying rates of erosion and uplift and continued marine deposition over the course of many epochs resulted in an intricate array of geologic units throughout this region.

Moving north to south, underlying units consist of Franciscan Complex sandstone, shale, or conglomerate rock in the mountainous areas in the San Bruno Mountain and Santa Cruz Mountains with bands of northwest trending Quaternary continental and marine deposits

and Merced Formation marine sandstone separating these mountain belts (Wagner et al. 1991). Granitic basement rocks are exposed west of the San Andreas/Pilarcitos faults to form Montara Mountain. Continuing southeast, Franciscan Complex sandstone, shale, conglomerate, or chert lie east of the San Andreas Fault with bands of Eocene and Miocene marine rocks (e.g., of unnamed Eocene marine rocks, San Lorenzo Formation, Lambert Shale, and Monterey Formation) interlaced with Miocene-aged basalt flows (i.e., Mindego Basalt) west of the fault zone. Pilo-Pleistocene non-marine deposits of sand and gravel fill the rift valley along the San Andreas Fault. Several small pockets of ultramafic rock are observed in this region as well (e.g., near the Crystal Springs Reservoirs, Pulgas Ridge, and Edgewood Park).

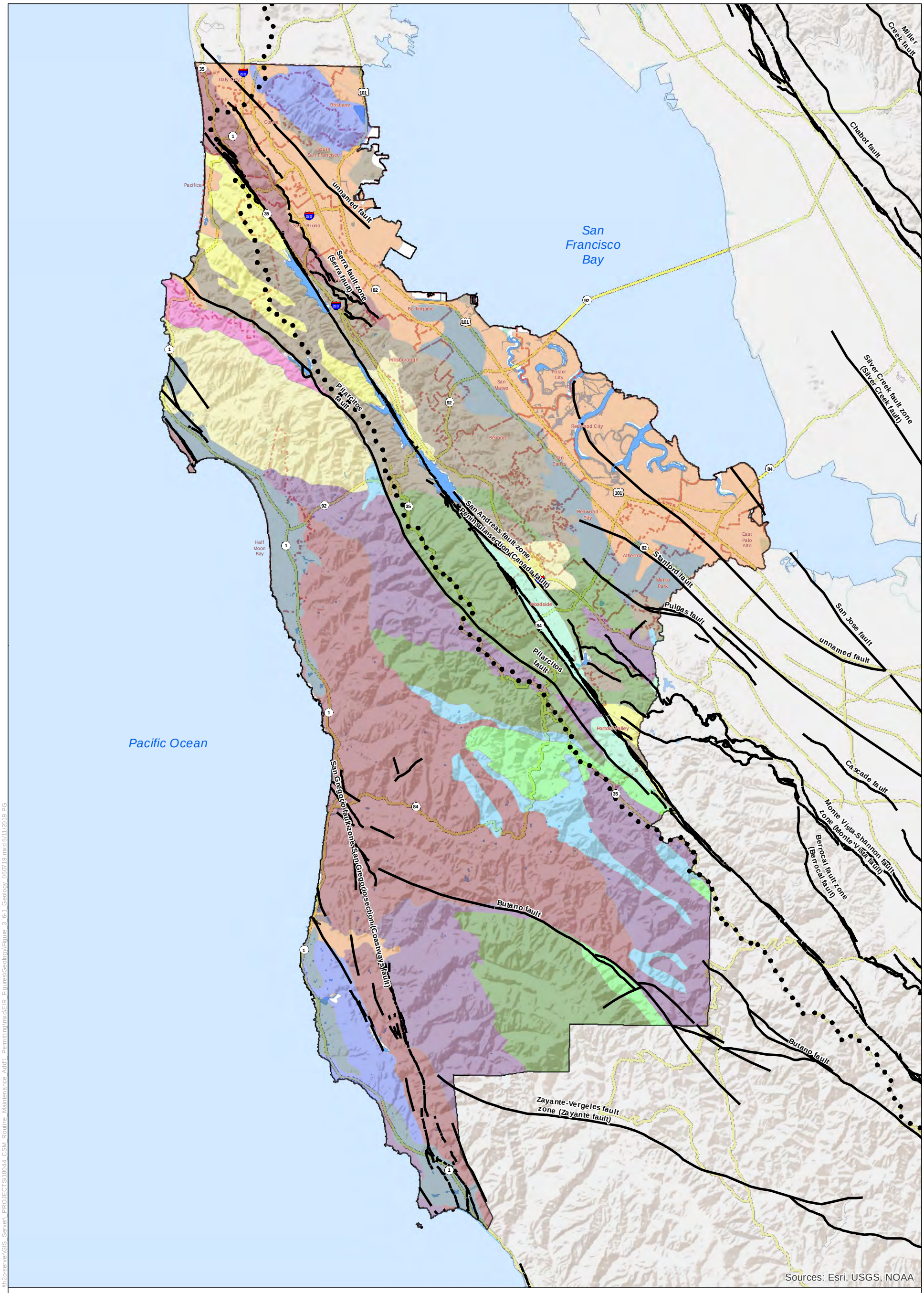
Moving east to west, geologic units continue to decrease in age, the Purisima Formation (Pliocene) the predominant rock unit in this region. This unit exhibits a very low slake durability[1] especially upon drying and rewetting and easily separates, altering channels or gullies that are underlain by this formation (San Francisco Bay Regional Water Quality Control Board [SFRWQCB] 2018).

Geology of the Santa Cruz Mountains in the southern portion of the County are directly influenced by tectonic forces associated with the San Gregorio Fault Zone and Butano Fault. Butano Sandstone (Eocene) extends south of the Butano Fault interlaced with parallel bands of San Lorenzo Formation. Santa Cruz Mudstone (Miocene-Pliocene) and Pigeon Point Formation (Upper Cretaceous) parallel the San Gregorio Fault at this location. Granitic basement rocks are exposed at Ben Lomond Mountain.

Bay Margin/Bay Plains

Geology of the Bayside generally consists of older Quaternary alluvium and terrace deposits extruding from the foothills and transition area from the mountains to the estuarine plain, with younger alluvium observed along the southern portion of the foothills near the cities of Menlo Park and Palo Alto (Wagner et al. 1991). Much of the San Francisco Bay shoreline consists of artificial fill, particularly around the San Francisco International Airport and Redwood City (Wagner et al. 1991). Near Foster City, the San Francisco Bay shoreline consists of artificial fill and intertidal deposits-peaty mud moving southward.

[1] Slake durability measures the resistance of a rock to weakening and disintegration when exposed to a standard cycle of drying and wetting and can be used to evaluate the weathering resistance of the rock.



Geologic Landform and Age

- marine and nonmarine (continental) sedimentary rocks, *Pleistocene*
- marine and nonmarine (continental) sedimentary rocks, *Pleistocene-Holocene*
- marine sedimentary and metasedimentary rocks, *Cretaceous-Jurassic*
- marine sedimentary and metasedimentary rocks, *Upper Cretaceous*
- marine sedimentary rocks, *Eocene*
- marine sedimentary rocks, *Miocene*
- marine sedimentary rocks, *Oligocene*
- marine sedimentary rocks, *Paleocene*
- marine sedimentary rocks, *Pliocene*
- metavolcanic rocks, *Mesozoic*
- nonmarine (continental) sedimentary rocks, *Pliocene-Pleistocene*
- plutonic rocks, *Mesozoic*
- volcanic rocks,
- Quaternary Faults
- San Mateo County
- Highway / Major Road
- Bayside / Coastside Watershed Boundary
- Ocean / Bay
- Water Feature

N

0 4 Miles

Horizon WATER and ENVIRONMENT

Source: San Mateo County GIS 2018; U.S. Geological Survey, California Geological Survey 2007

Figure 3.6-1 Geology of San Mateo County

San Mateo County Routine Maintenance Program

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Coastal Terrace/Bluffs

Along the Coastside region, geology generally consists of coastal terraces including the Monterey Formation – marine shale and sandstone – adjacent to Half Moon Bay; and Quaternary terrace deposits along the Pacific coastline (Wagner et al. 1991). Moving south, west of La Honda Fault, younger, Pliocene-age marine sandstone and siltstone of the Purisima Formation make up the western flanks of the Santa Cruz Mountains. West of the foothills of the Santa Cruz Mountains, broad, flat coastal terraces, which originated as ancient beaches uplifted during the Pleistocene, lie adjacent to Highway 1 near Half Moon Bay. Holocene landslide deposits can be seen sporadically throughout the younger marine sedimentary units. The basement rocks in the South Coastside region and Pescadero-Butano Watershed consist of the Great Valley Complex (on the Pigeon Point Block) west of the San Gregorio fault zone, and the Salinian Complex (on the La Honda Block) east of the San Gregorio fault zone. Throughout the coastal terrace region, major surface drainages frequently contain younger alluvium (e.g., San Pedro Creek, Montara Creek, San Vicente Creek, and Denniston Creek).

Paleontological Resources

A paleontological resource is defined as fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils. In California, paleontological resources are generally observed in sedimentary and metasedimentary deposits. Based on a database query of the University of California Museum of Paleontology in search of paleontological discoveries, 926 recorded collections were found within San Mateo County. Specimens included plant material, invertebrates, microfossils, and vertebrates; and were found in geologic formations listed below (University of California Museum of Paleontology [UCMP] 2019).

Geologic formations within San Mateo County with recorded[2] paleontological resources include:

- Butano
- Calera
- Chico
- Franciscan
- Gaviota
- Lambert Shale
- Markley
- Martinez
- Meganos
- Merced
- Mindego
- Monterey
- Palos Verdes Sand
- Pigeon Point
- Purisima
- Purisima Sandstone
- Santa Clara
- San Lorenzo
- Thornton Beach
- Thorton Beach
- Vaqueros
- Whiskey Hill
- unspecified recent Quaternary

Many recorded paleontological resources had unspecified locations within the County; however, the following paleontological resource locations in the vicinity of proposed maintenance sites were recorded: Moss Beach, San Vicente Creek, Pillar Point, Princeton Harbor, El Granada Beach, Purisima Creek, Tunitas Beach, La Honda, San Gregorio Lagoon, San Gregorio Beach, Pomponeo Beach, Butano Creek, Pigeon Point, Gazos Creek, Skyline

[2] Some collections did not specify geologic formation (UCMP 2019).

Drive, and Middlefield Road (UCMP 2019). Generally, most recorded paleontological resource locations were near the coastline.

Soils

Santa Cruz Mountains/Headwaters and Upper Watersheds

Within the program area, much of the mountainous, upper watershed areas are underlain with loam, or sandy loam to gravelly sandy loam (NRCS 2019). In general, soils overlie weathered bedrock and range in depth from 24 to 49 inches. These soils are typically well drained and moderately susceptible to erosion by water and high to very highly susceptible to erosion by wind.

North of Montara Mountain, soils overlying the hillslopes and mountain areas directly adjacent to Pacifica generally range in depth from 16 to 40 inches above bedrock and possess a moderately high to high susceptibility to erosion by wind and moderate erosion by water. South of the Pilarcitos Fault and Pilarcitos Canyon, most of the hillslopes are composed of soils that typically range from 19 to 41 inches above paralithic bedrock and are coarse sandy loam to sandy clay loam in texture. These units are generally well drained with high to very high runoff moderately susceptible to wind and water erosion.

The steeper, more mountainous areas of the eastern facing slopes of the Santa Cruz mountains consist of soils that are generally 10 to 40 inches thick and vary from gravelly sandy loam to fine sandy loam to loam (NRCS 2019). These soils possess a moderately high to high susceptibility to erosion by wind and moderate erosion by water. In the mountainous upper watershed areas near Lower Crystal Springs Reservoir, several loams begin to occur more commonly along upland slopes. These units generally range in depth from 20 to 40 inches and overlie paralithic or lithic bedrock. Many of these soils exhibit high to very high runoff and are extremely susceptible to wind erosion and moderately susceptible to water erosion.

Bay Margin/Bay Plains

In the program area's middle watershed areas, along the foothills of the Santa Cruz mountains, Los Gatos loam is commonly found along drainages and creek channels (e.g., San Mateo Creek, Easton Creek, and Mills Creek). This unit is comprised of residuum weathered from sedimentary rock. Los Gatos loam generally occurs as loam to gravelly loam 24 to 39 inches thick above bedrock (NRCS 2019). This unit is well drained with very high runoff. Los Gatos loam is highly susceptible to erosion by wind and moderately susceptible to erosion by water.

East of I-280, the Bay plains region is widely urbanized with mostly Urban land-Orthents soils (NRCS 2019). The undeveloped shoreline areas, salt marshes, and sloughs consist of alluvium deriving from mixed sources. These units are typically very deep (i.e., over 80 inches to a restrictive layer), consist of fine clays, very poorly drained, and exhibit low to moderately susceptibility to erosion by water (NRCS 2019).

Coastal Terrace/Bluffs

The northern portion of the Coastside is mostly urban, developed lands (i.e., Daly City and Pacifica) underlain by Urban land-Orthents soil units. South of Pacifica, alluvium can be found in the mid- and lower creek drainages. The mid- and lower creek drainages and the coastal

terrace near Half Moon Bay have loamy soils that are moderately susceptible to rill erosion by water and moderate to highly susceptible to wind erosion. The coastline supports a combination of rock outcrops or beaches of fine to coarse sand.

The majority of the central coastal terrace is made up of soils that are predominantly fine sandy loam to loam to gravelly loam, but may contain higher ratios of fine material lower in the watershed. Soils generally derive from sandstone, shale, or alluvium and overlay weathered bedrock with soil thickness varying from 20 to 60 inches, depending on elevation and slope (NRCS 2019). These soils are typically well-drained and moderately susceptible to erosion by wind and water.

Seismicity

The San Andreas Fault Zone, Peninsula section, is located in the center of the program area with other faults in the county associated with this fault zone. In the northern part of the program area, the Serra Fault runs parallel to the San Andreas Fault from Daly City to Burlingame. The Monte Vista Fault runs parallel to the San Andreas Fault in east of La Honda and towards Menlo Park. The San Gregorio Fault Zone runs northwest to southeast along the coast and intersects the program area in Montara (Seal Cove Fault) and in Pescadero south to Pigeon Point.

Shaking Scenarios

All nine Bay Area counties contain active faults. The probability of one or more large earthquakes (magnitude 6.7 or greater on the Richter scale) in the Bay Area resulting in widespread damage between 2014 and 2043 is estimated at 72 percent, within a 10 percent margin of error (USGS 2016). The active faults within the program area are listed below in **Table 3.6-1**.

Table 3.6-1. Major Faults in San Mateo County and Shaking Severity within the Program Area

Fault	Estimated Magnitude	Shaking Severity
Northern San Andreas Fault Zone	7.8	VII – Strong to X – Very Violent
San Gregorio Fault Zone	7.5	VII – Strong to X – Very Violent
Hayward Fault	7.0	V – Light to VIII – Very Strong
Calaveras Fault	7.0	VI – Moderate to VII – Strong

Sources: CGS 2010, ABAG 2014.

Shaking severity values shown in Table 3.6-1 are based on the Modified Mercalli Intensity Scale (MMI). The MMI, the current standard used throughout the United States to evaluate the effect of an earthquake, is an arbitrary ranking of perceived intensity based on observed effects. Less intense earthquakes are typically rated by individual accounts, whereas higher intensity events are rated based on observed structural damage.

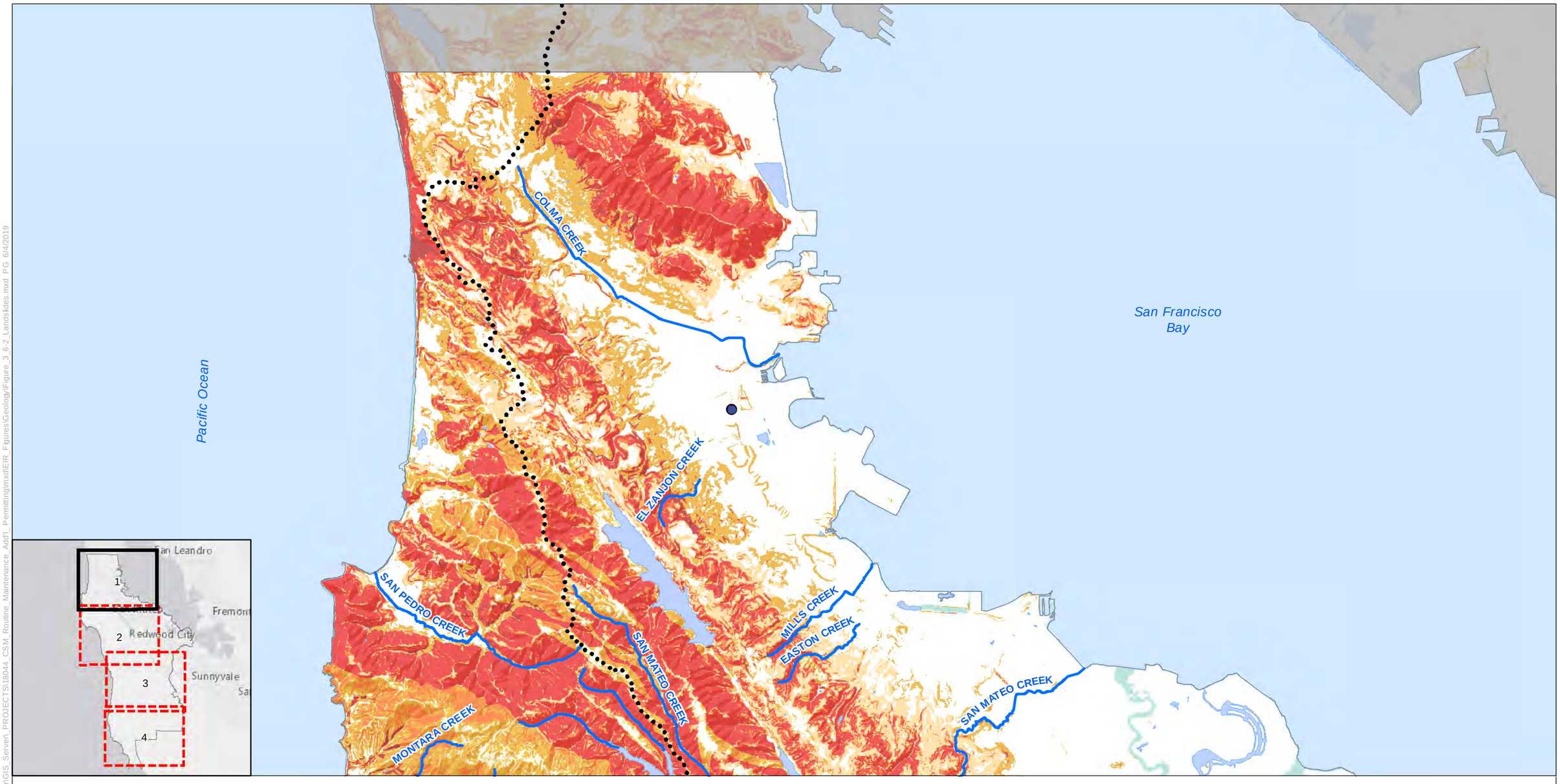
Landslides

Rock slope failure or landslides may occur in steeply sloped areas during substantial seismic events. Saturated soils and precipitation events increase the likelihood of a landslide being triggered.

The California Geological Survey (CGS) compiled and created statewide landslide susceptibility maps through interpolation of historic landslide information, local geology, rock strength, and hillslope angle (methodology by Wilson and Keefer 1985 and implemented by Ponti et al. 2008) to create classes of landslide susceptibility (where 0 is low and 10 is high) (CDOC 2019a). The landslide susceptibility map is shown in **Figure 3.6-2**, and areas of interest within the program area are described below.

In general, steeper portions of the Santa Cruz Mountains and upper watershed areas have a moderate (V to VIII) to high (IX to X) susceptibility of landslides (CDOC 2019b). A wider variation of geologic units in the upper watersheds east of the San Andreas Lake and Crystal Springs reservoirs result in a broader range of landslide susceptibility (V to X) in that region. Areas particularly susceptible to landslides include: the upper watersheds east of Crystal Springs Reservoir and North of Montara Mountain; the headwaters of the Santa Cruz Mountains between Half Moon Bay (Pilarcitos Creek) and Tunitas Creek; the La Honda watershed and surrounding slopes to the east; and the headwaters east of Pescadero and Pigeon Point (the upper watersheds of Pescadero, Butano, and Gazos creeks) (CDOC 2019b). Overall, the Coastside region of the program area is more susceptible to landslides, however, there are distinct regions in the upper watersheds of the Bayside that are also highly susceptible to landslides.

The steep slopes along the hillslopes within the upper watersheds of the Santa Cruz mountains and Coastal terrace are more susceptible to landslides, especially when the ground is saturated during storm events. When saturated soils occur near roadways, culverts, and bridge structures, landslides often occur to form road slip-outs. These slip-outs have resulted in exposed bridge abutments, crumbling roadsides, and ineffective culverts within the program area. Anticipated slip-out maintenance locations are shown in Figure 3.6-2 (labeled as bank repair/stabilization). Road and culvert infrastructure along Mills, Clear, Tunitas, Alpine, and Gazos creeks have been especially susceptible to landslides (see Figure 2-8).



N

0 1 2 3
Miles

Major Surface Water Features

- Bayside / Coastside Watershed Boundary
- Major Creek
- Ocean / Bay

Landslide Susceptibility Classes (0 - 10)

0	VI	IX
III	VII	X
V	VIII	

Anticipated Maintenance Locations

- Bank stabilization/bank repair
- Bridge maintenance
- Culvert repair or replacment
- Roadway drainage maintenance
- Sediment removal
- Shoreline maintenance
- Vegetation and sediment removal
- Vegetation, sediment removal, and planting

Horizon WATER and ENVIRONMENT

Source: USGS Geologic Map of the San Francisco Bay Area, California Department of Conservation Landslide Sucseptibility Map, 2019, San Mateo County Natural Features, 2018.

Figure 3.6-2
Landslide Susceptibility in San Mateo County

County of San Mateo
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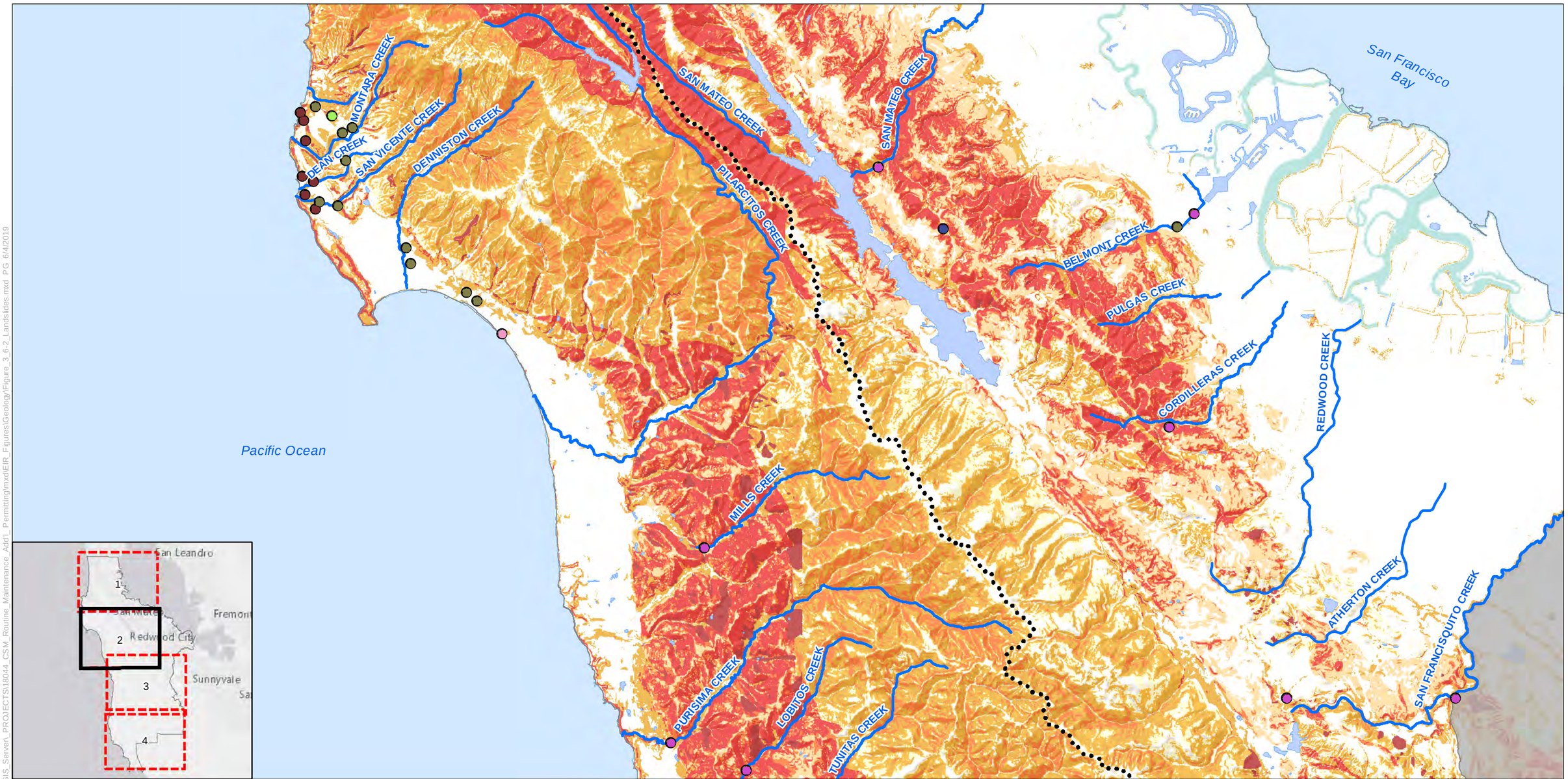

Horizon WATER and ENVIRONMENT

Source: USGS Geologic Map of the San Francisco Bay Area, California Department of Conservation Landslide Susceptibility Map, 2019, San Mateo County Natural Features, 2018.

Figure 3.6-2
Landslide Susceptibility in San Mateo County

County of San Mateo
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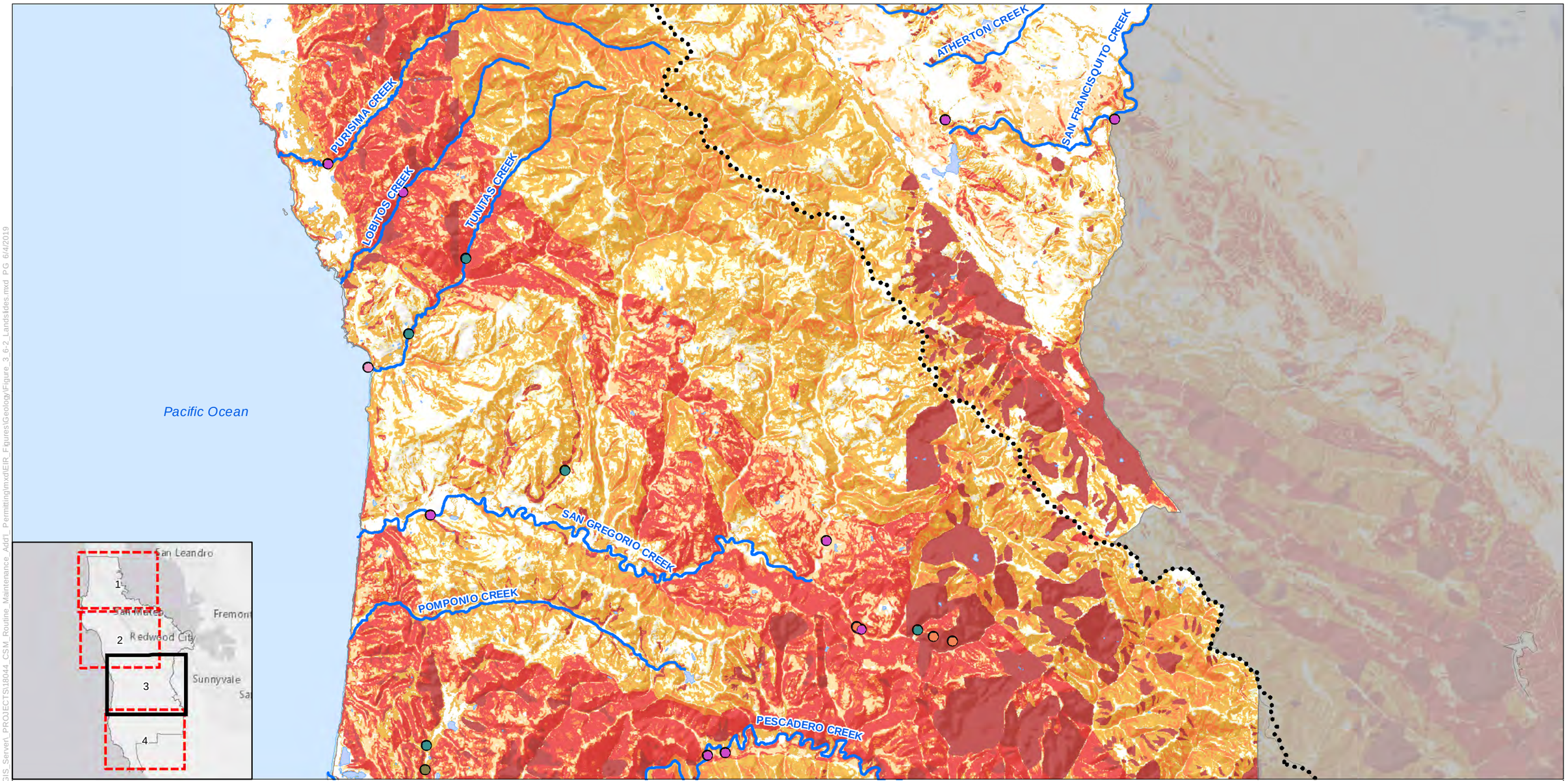

Horizon WATER and ENVIRONMENT

Source: USGS Geologic Map of the San Francisco Bay Area, California Department of Conservation Landslide Sucseptibility Map, 2019, San Mateo County Natural Features, 2018.

Figure 3.6-2
Landslide Susceptibility in San Mateo County

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Environmental Impact Report

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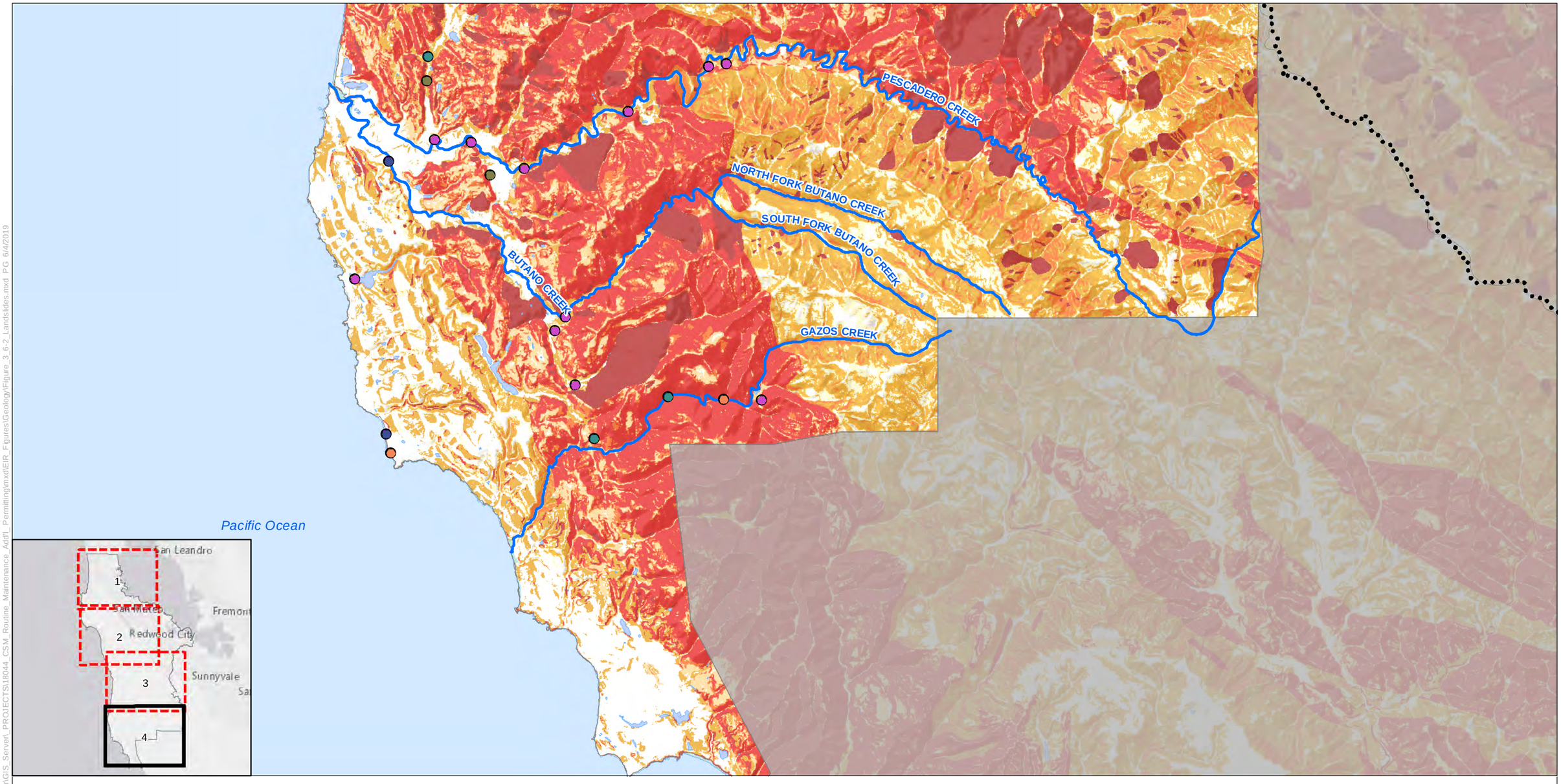

Figure 3.6-2
Landslide Susceptibility in San Mateo County

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Liquefaction

Soil liquefaction is a phenomenon that occurs when saturated sandy or silty soils lose strength during cyclic loading, such as caused by earthquakes. During the loss of strength, the soil acquires mobility sufficient to permit both horizontal and vertical movements, essentially behaving like a liquid. The factors known to influence liquefaction potential are soil type and depth, grain size, density, groundwater level, degree of saturation, and both the intensity and duration of ground shaking.

The alluvial valleys in the foothills of the mountains, the sandy soils in the coastal terrace, and low-lying and fill areas along the Bay plain may be susceptible to liquefaction. According to USGS liquefaction susceptibility maps, the Bay margins (San Bruno to Redwood City) have a "very high" liquefaction susceptibility (USGS 2006). Additionally, portions of the program area adjacent to the Bay plain in the east and the coastal terrace to the west are designated as having a "low" to "moderate" liquefaction susceptibility. The Santa Cruz Mountains and upper watershed areas generally have little to no risk of liquefaction.

Coastal Cliff/Bluff Instability or Erosion

Significant portions of the County along the Pacific coastline are susceptible to bluff or cliff erosion or other related geologic instability issues. The County defines coastal bluff or cliffs as "a steep face of rock, decomposed rock, sediment or soil resulting from erosion, faulting, folding or excavation of the land mass and exceeding 10 feet in height" (County of San Mateo 2013). Within the last 25 years, cliff retreat in the South San Francisco Region (San Francisco to Point Año Nuevo) has occurred at an average rate of -0.2 meters of erosion per year, threatening new bluff and cliff top development and damaging existing infrastructure and property (Hapke et al. 2009). The County of San Mateo Local Coastal Program Policies (2013) include regulations for safe development on bluff and cliff tops to reduce bluff instability for new development.

3.6.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

Uniform Building Code

The 1997 Uniform Building Code (UBC) was developed by the International Conference of Building Officials (ICBO) and is used in most states, including California, and local jurisdictions to set basic standards for acceptable design of structures and facilities. The UBC provides information on criteria for seismic design, construction, and load-bearing capacity associated with various buildings and other structures and features. Additionally, the UBC identifies design and construction requirements to address and mitigate potential geologic hazards. New construction generally must meet the requirements of the most recent version of the UBC.

State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (California Public Resources Code [PRC] Section 2621 *et seq*.) was passed to reduce the risk to life and property from surface faulting

in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy directly on or across the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, such as strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the State of California is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses expansive soils, settlement, and slope stability. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within a seismic hazard zone until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

California Coastal Commission

The California Coastal Commission was established by voter initiative in 1972 (Proposition 20) and later made permanent by the Legislature through adoption of the California Coastal Act of 1976 (Coastal Act). The Coastal Act includes specific policies that address shoreline access, development and land use, aesthetics, water quality, and protection and enhancement of terrestrial and marine habitat and natural resources. Under the Coastal Management Program, the California Coastal Commission manages development along the California coast, excluding San Francisco Bay. The Coastal Act broadly defines development activities to include construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters.

The California Coastal Commission plans and regulates the development and use of land and water in the coastal zone. The coastal zone extends three nautical miles offshore and varies in width from several hundred feet in highly urbanized areas to up to five miles in certain rural areas. Within the County, the coastal zone includes a narrow band of coastline near the City of Pacifica and Point San Pedro before extending inland 5 miles east of Half Moon Bay, continuing south to the County line. Development activities in the coastal zone generally require a permit from either the Coastal Commission or the local governments. Since 1981, the County assumed responsibility for implementing the Coastal Act in unincorporated areas of San Mateo County, including issuance of Coastal Development Permits. Prior to issuing a development permit, project applicants must comply with the policies in the Local Coastal Program; relevant policies to the proposed program are shown in Appendix C of this DEIR.

California Building Standards Code

Title 24 of the California Building Standards Codes (specifically Title 24 California Code of Regulations [CCR], Part 2) specifies standards for geologic and seismic hazards other than surface faulting. These codes are administered and updated by the California Building Standards Commission. This code specifies criteria for open excavation, seismic design, and load-bearing capacity directly related to construction in California. The seismic building requirements under the California Building Standards Codes are more stringent than those of the federal UBC.

California Public Resources Code

California Public Resources Code, Section 5097.5 states that "no person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor." As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

Local Laws, Regulations, and Policies

Applicable local plans, policies, regulations and ordinances are presented in Appendix C.

3.6.3 IMPACT ANALYSIS

Methodology

Impacts related to geology, soils, seismicity, and associated hazards were evaluated based on professional standards and review of soils and geologic information for the program area. This analysis focused on the proposed program's potential to increase the risk of personal injury, risk of loss of life, and damage to property as a result of existing geologic conditions in the program area. The impact analysis assumes that the risk to, or posed by, existing County facilities from seismic hazards, expansive soils, or other geologic hazards within the program area are part of the baseline condition and would not be an impact of the proposed program. Large construction projects involving repair of existing County facilities as a result of such geologic hazards would constitute capital improvements, which are outside the scope of the proposed program. More specifically, this analysis evaluates potential risks associated with conducting the following types of maintenance activities: bank stabilization, slip-out repairs, erosion protection at bridge abutments, and repair and replacement of culverts. This analysis also considers the proposed program's potential impacts on paleontological resources.

Criteria for Determining Significance

Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines and the County's environmental checklist, the proposed program would have a significant impact related to geology, soils, and seismicity if it would:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

  - 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);
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction;
  - Landslides; or
  - Coastal cliff/bluff instability or erosion
- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the UBC (1994) creating substantial direct or indirect risks to life or property;
- 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 wastewater; or
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

This evaluation dismisses the criterion related to land subsidence or collapse since the proposed program would not involve withdrawal of groundwater or other subsurface resources. Additionally, while the proposed program may involve some maintenance activities on expansive soil, the criterion regarding expansive soils has been dismissed since the proposed program would improve overall conditions at existing County facilities and would thereby would not result in increased risks to life or property. The impact analysis also dismisses the criterion regarding soil capability for handling septic tanks or alternative waste water disposal systems because the proposed program would not affect or create additional demand for septic tanks or alternative wastewater disposal systems. Lastly, issues related to soil erosion are addressed in Section 3.9, *Hydrology and Water Quality*, of this DEIR.

Environmental Impacts

Impact GEO-1: Substantial Adverse Effects Resulting from Fault Rupture, Strong Seismic Ground Shaking, Liquefaction, or Coastal Cliff/Bluff Instability or Erosion (*Beneficial*)

As discussed in the environmental setting above, several active faults are located within or near the program area (Wagner et al. 1991). Surface rupturing as a result of a seismic event would likely occur along known fault lines within the program area. Liquefaction would be expected to occur in areas with saturated, unconsolidated, sandy soils. In the event of a seismic occurrence, fault rupture, ground failure, and liquefaction may result in undifferentiated ground settlement.

As discussed in Chapter 2, *Project Description*, the proposed program does not involve new facility construction or maintenance activities at facilities that are temporarily or permanently occupied by people. Thus, the program would have no impact on people or property due to fault rupture or earthquake-induced ground shaking, ground failure, and liquefaction.

The following Parks Department facilities on the Coastside include coastal cliffs or bluffs: Devil's Slide Trail, Fitzgerald Marine Reserve, Pillar Point Bluff, and Mirada Surf West. Maintenance activities that may occur in the vicinity of coastal bluffs or cliffs within these parks include trail and road maintenance, weed or non-native plant removal, other vegetation maintenance activities such as brush removal or mowing, and other minor facility repairs. Because the program would be focused on repairing existing roads and trails and maintaining vegetation along such facilities, the proposed program is not anticipated to substantially increase instability or erosion of coastal cliffs and bluffs. If anything, some of these maintenance activities may be required in response to ongoing erosion of coastal cliffs or bluffs.

While the proposed program does not involve construction or maintenance of inhabitable structures, proposed maintenance activities include the replacement or repair of culverts, erosion protection improvements at bridge abutments, and bank stabilization and road slip-out repairs. By improving conditions at degraded roadside culverts, bridge abutments, failed embankments, and road slip-outs, proposed maintenance activities would in fact reduce the degree of seismic and liquefaction-induced effects that would occur at these County sites relative to existing conditions. The slopes and soil supporting such structures would be stabilized and better equipped to handle seismic activity in comparison to existing conditions. Therefore, the proposed program would have a beneficial effect. In the event that an earthquake occurred during implementation of these types of maintenance activities, construction workers may be temporarily exposed to safety hazards. The County would adhere to applicable California Building Code (CBC) standards during design and implementation of these maintenance activities. In addition, while not necessary to reduce the impact to a less than significant level, implementation of the below-listed BMPs would ensure worker safety and protection of public health and property during maintenance work.

Applicable Best Management Practices

The County would implement the following BMPs to further minimize temporary impacts and ensure worker safety during construction. A description of these BMPs are provided in Table 2-3 in Chapter 2, *Project Description*.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-16: Timing of Work
- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-22: Site Stabilization

Conclusion

As described above, the proposed program would improve conditions at various locations throughout the County by repairing degraded culverts, bridge abutments, failed banks and road slip-outs. Overall, the proposed program would have a **beneficial** effect. The application of the above-listed BMPs provide would further minimize temporary impacts and ensure worker safety during construction.

Impact GEO-2: Substantial Adverse Effects Involving Landslides (*Beneficial*)

Landslides can result in substantial property damage, injury, and loss of life. Landslides are more likely to occur with saturated soil conditions, and often occur during the winter months without being induced by an earthquake. As discussed in the environmental setting, much of the program area is located in a region designated as highly susceptible to landslides (CDOC 2019b).

The proposed program would not involve construction of habitable structures. Therefore, no additional long-term exposure to landslides beyond current conditions would occur as a result of the program. Proposed maintenance activities would improve County infrastructure including bridges, culverts and roads that have been damaged due to erosion. These actions would stabilize adjacent slopes and improve the structures – reducing the risk of further damage during earthquake-induced landslides. Therefore, the proposed program would have a beneficial effect in regards to structures within the program area and would reduce the exposure of people and structures to potential substantial adverse effects from landslides.

During implementation of maintenance activities on steep slopes (e.g. slip-outs, bank stabilization, culvert replacements, and bridge improvements), there would be some risk to individuals working in landslide-prone sites if a seismic event resulted in significant ground shaking. However, exposure to this risk would be temporary and limited to the maintenance period (typically no more than three weeks at a given site). While not required to reduce the impact to a less than significant level, implementation of the below-listed BMPs would minimize temporary risks during implementation of such maintenance activities.

Applicable Best Management Practices

The County would implement the following BMPs to further minimize temporary impacts. A description of these BMPs is provided in Table 2-3.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-16: Timing of Work
- BMP GEN-22: Site Stabilization
- BMP EC-13: Slope of Bank Stabilization
- BMP SC-6: Diversion Berm

Conclusion

On the whole, the proposed program's effect on people or property regarding landslide issues would be **beneficial**. Although not required to reduce this impact, application of the above-

listed BMPs would further avoid and minimize potential effects on construction workers in landslide-prone areas during implementation of proposed maintenance activities.

Impact GEO-3: Directly or Indirectly Destroy a Unique Paleontological Resource or Site or Unique Geologic Feature (*Less than Significant*)

Most of the maintenance activities proposed at or near creeks would be conducted at existing structures or channels that have been modified from their natural condition, and therefore do not contain geologic material with a high likelihood of containing paleontological resources. However, routine maintenance activities undertaken as part of the proposed program include varying degrees of ground-disturbing activities that have the potential to encounter paleontological resources. Ground-disturbing maintenance activities that occur where native soils are present, including culvert replacement, bridge maintenance, road maintenance where grading is involved, and hazard tree removal, could adversely affect previously documented or unknown paleontological resources. Implementation of the below-listed BMPs would minimize potential impacts on paleontological resources. Specifically, implementation of BMP CUL-6 would ensure that work is stopped and treatment measures are implemented in the event of such a discovery.

Applicable Best Management Practices

The following BMPs would help minimize potential impacts to paleontological resources. Descriptions of these BMPs are provided in Tables 2-3 and 2-4 in Chapter 2.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-22: Site Stabilization
- BMP EC-13: Slope of Bank Stabilization
- BMP CUL-6: Address Discovery of Cultural Remains or Historic or Paleontological Artifacts Appropriately

Conclusion

With implementation of the above-listed BMPs, potential impacts to paleontological resources would be considered **less than significant**.

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3.7 GREENHOUSE GAS EMISSIONS, CLIMATE CHANGE, AND ENERGY

This section describes the existing greenhouse gas (GHG) and climate change context in the study area, which includes the County of San Mateo Routine Maintenance Program (proposed program) area and the whole state of California. This section also describes energy resources that serve the proposed program area. This section then describes the regulatory setting and evaluates the proposed program's effects on GHG emissions, climate change, and energy resources. The impact evaluation begins by describing the methodology used to evaluate significance and then presents the impact analysis.

3.7.1 ENVIRONMENTAL SETTING

Climate change results from the accumulation in the atmosphere of GHGs, which are produced primarily by the burning of fossil fuels for energy. Because GHGs (CO_2, methane, and N_2O) persist and mix in the atmosphere, emissions anywhere in the world affect the climate everywhere in the world. GHG emissions are typically reported in terms of carbon dioxide equivalents (CO_2e), which convert all GHGs to an equivalent basis taking into account their global warming potential (GWP) compared to CO_2. **Table 3.7-1** shows the six GHGs and their respective GWP.

Table 3.7-1. Greenhouse Gas Overview and Global Warming Potential

Greenhouse Gas	GWP over 100 years (in IPCC 2013/SAR)[a]	Description
Carbon Dioxide (CO_2)	1/1	Released into the atmosphere through burning of fossil fuels (coal, natural gas and oil), solid waste, trees, and wood products, and also because of certain chemical reactions; removed from the atmosphere when it is absorbed by plants and oceans; remains in the atmosphere for 50 to more than 100,000 years.
Methane (CH_4)	28/21	Emitted during the production and transport of coal, natural gas, and oil; methane emissions also result from livestock and other agricultural practices and from the decay of organic waste, notably in municipal solid waste landfills; remains in the atmosphere for about 10 years.
Nitrous Oxide (N_2O)	265/310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste; remains in the atmosphere for about 100 years.
Hydrofluoro-carbons (HFCs)	4-12,400/ 650–11,700	Typically used in refrigeration and air conditioning equipment, as well as in solvents; emissions are generated primarily from use in air conditioning systems in buildings and vehicles; remains in the atmosphere from 10 to 270 years.

Greenhouse Gas	GWP over 100 years (in IPCC 2013/SAR)[a]	Description
Perfluoro-carbons (PFCs)	6,630-11,100/ 6,500–9,200	Emitted as by-products of industrial and manufacturing sources; remains in the atmosphere from 800 to 50,000 years.
Sulfur Hexa-fluoride (SF_6)	23,500/23,900	Used in electrical transmission and distribution; remains in the atmosphere approximately 3,200 years.

[a] As scientific understanding of the global warming potential (GWP) of various greenhouse gases (GHGs) improves over time, GWP values are updated in the Intergovernmental Panel on Climate Change (IPCC) scientific assessment reports. For regulatory consistency, however, the United Nations Framework Convention on Climate Change reporting guidelines (and international treaties) for national inventories continue to the use of GWP values to those published in the IPCC's 1996 Second Assessment Report (SAR). The table shows GWP values for 100 years from IPCC 2013 and SAR.

Sources: U.S. Environmental Protection Agency [USEPA] 2018; IPCC 2013; IPCC 1996

These six gases are the major GHGs that were recognized by the United Nations Framework Convention on Climate Change and other international climate change treaties including the Kyoto Accords which was the first international treaty to establish GHG emission reduction goals. Other GHGs were not recognized by the international treaties, chiefly because of the smaller role that they play in global climate change or the uncertainties surrounding their effects. One GHG not recognized by the international treaties is atmospheric water (H_2O) because no obvious correlation exists between H_2O and specific human activities. Water appears to act in a feedback manner; higher temperatures lead to higher H_2O concentrations, which in turn cause more global warming (Intergovernmental Panel on Climate Change [IPCC] 2003). Nitrogen trifluoride was not recognized in the initial Kyoto Accords, but was subsequently included by the United Nations Framework Convention on Climate Change and recognized in California as a GHG.

The most important GHG in human-induced global warming is CO_2. Although many gases have much higher GWP than the naturally occurring GHGs, CO_2 is emitted in such vastly higher quantities that it accounts for about 82 percent of the GWP of all GHGs emitted by the United States (USEPA 2017a). Fossil fuel combustion, especially for the generation of electricity and powering of motor vehicles, has led to substantial increases in CO_2 emissions over time and, thus, substantial increases in atmospheric CO_2 concentrations. In 2005, atmospheric CO_2 concentrations were about 379 ppm, more than 35 percent higher than the pre-industrial concentrations of about 280 ppm (Forster et al. 2007, as cited in IPCC 2007). In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its long lifespan in the atmosphere (50,000–100,000 years).

In 2015, total Bay Area GHG emissions were 85 million metric tons of carbon dioxide equivalents (MMT CO_2e) which represents a decrease from the 86.6 $MMTCO_2e$ estimated for 2011 emissions (Bay Area Air Quality Management District [BAAQMD] 2015, BAAQMD 2017a). The transportation sector was the largest source of emissions, accounting for approximately 41 percent of the total 2015 emissions. Light and medium-duty cars and trucks accounted for 72 percent of emissions in the transportation sector while heavy duty truck accounted for 16 percent.

Energy Resources and Consumption

California has extensive energy resources, including an abundant supply of crude oil, high production of conventional hydroelectric power, and leads the nation in electricity generation from renewable resources (solar, geothermal, and biomass resources) (U.S. Energy Information Administration [EIA] 2019). California has the second highest total energy consumption in the United States but one of the lowest energy consumption rates per capita (48th in 2016) due to its mild climate and energy efficiency programs (EIA 2019). A comparison of California's energy consuming end-use sectors indicates that the transportation sector is the greatest energy consumer, by approximately two to three times compared to the other end-use sectors (Industrial, Commercial, and Residential, which are listed in order of greatest to least consumption) (EIA 2019). California is the largest consumer of motor gasoline and jet fuel in the United States (EIA 2019).

In San Mateo County, data collected for the County of San Mateo Climate Action Plan for Government Operations indicates that government operations in 2010 generated 39,621 MT CO_2e, which is a 1,896 MT CO_2e reduction from 2005. The largest sources of GHG emissions (and presumably energy use) were from building energy use (46 percent), employee commutes (37 percent), and vehicle fleet & mobile equipment (12 percent) (County of San Mateo 2012).

The County's Climate Action Plan contains a strategy to purchase fuel efficient, low emissions vehicles and the Board of Supervisors approved a Fuel-Efficient County Vehicle Purchasing Policy in 2008 (County of San Mateo 2012). Through the San Mateo County Electric Vehicle Initiative, the County is working to electrify its fleet and boost electric vehicle adoption throughout the county (County of San Mateo 2019). Therefore, while emissions from the proposed program would be linked to the use of vehicles and other equipment, over the life of the program some of these vehicles and equipment may be fully or partially powered using electricity from the grid. The proposed program is located within the service areas of Pacific Gas and Electric (PG&E) and Peninsula Clean Energy (PCE).

Table 3.7-2 provides a more detailed breakdown of PG&E's and PCE's energy resources. For customers in the proposed Project Area served by PG&E, approximately 21 percent of the power provided comes from solar and wind renewable sources, while the remaining 79 percent comes from a mixture of other eligible renewable sources, nuclear, large hydroelectric, natural gas, and unspecified sources of power. PCE offers customers two different plans with solar and wind sources making up 31-100% of power provided. As described in Section 3.2, *Regulatory Setting*, below, California's renewable portfolio standard (RPS) requires electricity suppliers to increase the amount of electricity generated from renewable sources to 33 percent by 2020, to 50 percent by 2026, and 100 percent by 2045; which will decrease the GHG intensity of the electricity the proposed program will utilize in the future.

Table 3.7-2. Summary of Energy Sources for PG&E, & PCE

Energy Resources	Utility Power Mix (%)			California Power Mix (2017)**
	PG&E (2017)	PCE (2017) Power Mix		
		ECOplus	ECO100	
Eligible Renewable	33	53	100	29
Coal	0	0	0	4
Large Hydroelectric	18	33	0	15
Natural Gas	20	0	0	34
Nuclear	27	0	0	9
Unspecified Power*	2	15	0	9
Total	100	100	100	100

* "Unspecified power" is defined as electricity from transactions that are not traceable to specific generation sources.

** Percentages are estimated annually by the California Energy Commission based on the electricity sold to California consumers during the identified year.

Sources: CEC 2018a, CEC 2018b

Issues Linked to Climate Change

Anthropogenic (human-caused) emissions of GHGs are widely accepted in the scientific community as contributing to global warming. Temperature increases associated with climate change are expected to adversely affect plant and animal species, cause ocean acidification and sea level rise, affect water supplies, affect agriculture, and harm public health.

Global climate change is already affecting ecosystems and societies throughout the world. Climate change adaptation refers to the efforts undertaken by societies and ecosystems to adjust to and prepare for current and future climate change, thereby reducing vulnerability to those changes. Human adaptation has occurred naturally over history; people move to more suitable living locations, adjust food sources, and more recently, change energy sources. Similarly, plant and animal species also adapt over time to changing conditions; they migrate or alter behaviors in accordance with changing climates, food sources, and predators.

Many national, as well as local and regional, governments are implementing adaptive practices to address changes in climate, as well as planning for expected future impacts from climate change. Some examples of adaptations that are already in practice or under consideration include conserving water and minimizing runoff with climate-appropriate landscaping, capturing excess rainfall to minimize flooding and maintain a constant water supply through dry spells and droughts, protecting valuable resources and infrastructure from flood damage and sea level rise, and using energy- and water-efficient appliances.

In San Mateo County, sea level rise due to climate change is expected to impact large areas of low-lying developed land by 2050. This rise in sea level will also increase the areas and

number of people at risk of experiencing 100-year flood events (San Mateo County 2012). Large sections of the County's shoreline, including the section of coast from El Granada to Half Moon Bay, are already experiencing increased erosion due to sea level rise. The San Mateo County Sea Level Rise Vulnerability Assessment found that in the event of a mid-level 2100 sea level rise scenario, property with an assessed value of $34 billion would be flooded on the Bayside and on the Coastside north of Half Moon Bay. In addition, the Assessment found that $932 million in assessed property value could be at risk from erosion on the Coastside north of Half Moon Bay (County of San Mateo 2018). The County's forests and parks sequester carbon dioxide and may therefore be useful in limiting the impacts of climate change (County of San Mateo 2013). The proposed program area includes forest resources as well as areas that will be impacted by sea level rise, increased flooding, and bluff/shoreline erosion. Forest resources are discussed further in Section 3.1.4, *Sections Eliminated From Further Analysis,* and current flood hazards are detailed in Section 3.9, *Hydrology and Water Quality*.

3.7.2 REGULATORY SETTING

This subsection discusses the federal, state, and local laws, and regulations that pertain to GHG emissions in the proposed project area and the state of California.

Federal Laws, Regulations, and Policies

USEPA is responsible for the regulation of transportation-related emission sources, such as aircraft, ships, and certain types of locomotives, under the exclusive authority of the federal government. USEPA also establishes vehicular emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet stricter emission standards established by California Air Resources Board (CARB).

In *Massachusetts v. The Environmental Protection Agency* [2007], the U.S. Supreme Court ruled that GHGs are air pollutants that can be regulated under the Clean Air Act [CAA]. The court found that USEPA has a mandatory duty to enact rules regulating mobile GHG emissions under the CAA. The court held that GHGs fit the definition of an air pollutant that causes and contributes to air pollution and may reasonably be anticipated to endanger public health or welfare. Following the court's decision, in 2009, the USEPA Administrator found that the current and projected concentrations of GHGs threaten public health and welfare of current and future generations and that combined emissions from new motor vehicles contribute to GHG pollution.

Corporate Average Fuel Economy Standards

On April 1, 2010, USEPA and the National Highway Traffic Safety Administration (NHTSA) established a program to reduce GHG emissions and improve fuel economy standards for new model year 2012–2016 cars and light trucks. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. On October 15, 2012, USEPA and NHTSA established a program to reduce GHG emissions and improve fuel economy standards for new cars and light trucks through 2025 (USEPA 2012). In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2017b). However, in August 2018, USEPA and the NHTSA proposed amendments to the standards covering

model years 2021 – 2026 that would decrease the existing fuel efficiency requirements for those years (NHTSA 2019).

State Laws, Regulations, and Policies

California Environmental Protection Agency (Cal EPA) is a state agency that includes CARB, the State Water Resources Control Board (SWRCB), nine Regional Water Quality Control Boards (RWQCBs), California Department of Resources Recycling and Recovery (CalRecycle), California Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment (OEHHA), and California Department of Pesticide Regulation (CDPR). The mission of Cal EPA is to restore, protect, and enhance the environment, to ensure public health, environmental quality, and economic vitality.

GHG Reduction Goals

In recent years, California has enacted a number of policies and plans to address GHG emissions and climate change. In 2006, the California State Legislature enacted Assembly Bill (AB) 32, the Global Warming Solutions Act, which set the overall goals for reducing California's GHG emissions to 1990 levels by 2020. Executive Order (EO) S-3-05 established a goal of 80 percent below 1990 levels by 2050. EO B-30-15 established an interim target to reduce California's GHG emissions to 40 percent below 1990 levels by 2030, and the 2030 target has been codified in Senate Bill (SB) 32, which was signed into law on September 8, 2016. Along with SB 32, AB 197 was also signed into law on September 8, 2016, and requires the state to focus its pollution-reduction efforts on disadvantaged communities and to increase legislative oversight of climate programs.

CARB approved the *First Update to the AB 32 Scoping Plan* on May 22, 2014 (CARB 2014). This update defines climate change priorities for the next 5 years and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The update also highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals and evaluates how to align the state's longer term GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use.

In 2017, CARB further updated the Scoping Plan to reflect progress since 2005, additional reduction measures, and plans for reductions beyond 2020. CARB approved the *2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target* (CARB 2017a) on December 14, 2017, to reflect the 2030 target set by EO B-30-15 and codified by SB 32 (CARB 2017a, CARB 2018). The 2017 Scoping Plan includes further emission reductions from cap and trade, clean energy, doubling building energy efficiency, clean fuels, transit-oriented development, clean cars and transit, sustainable freight, reduction of methane and refrigerants, and restoration of natural and working lands.

GHG Reduction Regulations

CARB has completed rulemaking to implement several GHG emission reduction regulations and continues to investigate the feasibility of implementing additional regulations. These include the low carbon fuel standard, which reduces GHG emissions associated with fuel usage, and the RPS, which requires electricity suppliers to increase the amount of electricity generated from renewable sources to certain thresholds by various deadlines. SB 350

established a California GHG reduction target of 40 percent below 1990 levels and sets a renewable portfolio goal of 50 percent by 2030, along with encouraging energy efficiency savings and electrification of transportation. In 2018, SB 100 updated the RPS to require 50% renewable resources by the end of 2026, 60% by the end of 2030, and 100% renewable energy and zero carbon resources by 2045. EO B-55–18 signed by Gov. Brown set a goal of statewide carbon neutrality by 2045 and net negative emissions thereafter.

In January 2012, CARB approved the Advanced Clean Cars Program, a vehicle emission control program for model years 2017–2025. To advance California's support of the national program to regulate emissions, CARB submitted a proposal that would allow automobile manufacturer compliance with USEPA's requirements to show compliance with California's requirements for the same model years. The final rulemaking package was filed on December 6, 2012, and the final rulemaking became effective on December 31, 2012.

California Integrated Energy Policy

SB 1389, passed in 2002, requires the California Energy Commission (CEC) to prepare an *Integrated Energy Policy Report* (IEPR) for the governor and legislature every 2 years and an update every other year (CEC 2019a). The report analyzes data and provides policy recommendations on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewable energy, and public interest energy research (CEC 2019a). The 2017 *Final Integrated Energy Policy Report* includes policy recommendations such as implementing the Clean Energy and Pollution Reduction Act; resiliency of the electricity sector; and addressing the vulnerability of California's energy infrastructure to extreme events related to climate change, including sea-level rise and coastal flooding (CEC 2019a). The 2018 IEPR Update, *Toward A Clean Energy Future*, was split into two volumes that were adopted separately in August 2018 and February 2019 (CEC 2018c, CEC 2019b). The 2018 Update covers a broad range of topics, including decarbonizing buildings, energy efficiency, energy equity, integrating renewable energy, climate adaptation activities for the energy sector, and the California Energy Demand Forecast.

San Francisco Bay Conservation and Development Commission

As also discussed in Section 3.9 *Hydrology and Water Quality*, the McAteer-Petris Act of 1965 established the San Francisco Bay Conservation and Development Commission (BCDC) to protect, enhance, and ensure responsible use of San Francisco Bay and the adjacent shoreline band. Under the McAteer-Petris Act, the San Francisco Bay Plan, and other plans for specific areas around the Bay, BCDC has regulatory responsibility over development in San Francisco Bay and shoreline margins within its jurisdiction. In more recent years, BCDC has adopted policies to require projects to be resilient to rising sea level based on a project's expected life.

Regional Laws, Regulations, and Policies

BAAQMD Regulations and Plans

In an effort to address GHG emissions from the Bay Area, the BAAQMD has established a 10-point climate action work program and prepared Bay Area GHG production- and consumption-based emissions inventories (BAAQMD 2014, 2016). The climate action work program describes specific actions that the BAAQMD will implement to comply with

statewide GHG emission reduction targets (BAAQMD 2014). Some of the 10 identified actions include the following:

- setting a GHG reduction goal (80 percent below 1990 levels by 2050),
- updating GHG emission inventory and forecasting,
- monitoring GHG emissions,
- developing a regional climate action strategy,
- supporting and enhancing local action,
- initiating rule development,
- exploring the Bay Area's energy future, and
- expanding enforcement.

BAAQMD Clean Air Plan and Regional Climate Protection Strategy

The BAAQMD has adopted and released the *Final 2017 Bay Area Clean Air Plan* (also known as *Spare the Air – Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area*) and *Regional Climate Protection Strategy* (RCPS) that updates the *2010 Bay Area Clean Air Plan*; provides a road map for the BAAQMD's future efforts to reduce air pollution; and identifies rules, control measures, and strategies to reduce GHG emissions throughout the Bay Area. As part of this update, 85 control measures have been identified and categorized within nine economic sectors, including stationary sources, transportation, waste, water, and energy. Potential measures applicable to the proposed program include (but are not limited to) the reduction of solid waste, reduction of water use, construction material recycling, and use of clean available construction equipment in local projects (BAAQMD 2017a).

Local Laws, Regulations, and Policies

San Mateo County has two Climate Action Plans in place, a Government Operations Climate Action Plan (2012) and an Energy Efficiency Climate Action Plan (2013). The Government Operations plan, which would be applicable to the proposed program, contains a goal of 15% reduction in GHG emissions by 2020 and outlines measures to reach this goal in the areas of energy, transportation, and solid waste. The Plan includes a Climate Action Strategy to purchase fuel-efficient, low emissions vehicles. Other applicable local plans, policies, regulations and ordinances are presented in Appendix C.

With support from Congresswoman Jackie Speier, the County and City/County Association of Governments (C/CAG) recently formed the Flood and Sea Level Rise Resiliency Agency comprised of 20 incorporated cities, C/CAG and the County of San Mateo to develop a coordinated response to sea level rise issues. The agency consolidates efforts of the San Mateo County Flood Control District and Flood Resiliency Program and will initiate new countywide efforts to address sea level rise, flooding, coastal erosion, and large-scale stormwater infrastructure improvements through integrated regional planning, project implementation, and long-term maintenance.

3.7.3 IMPACT ANALYSIS

Methodology

This section describes the methods used to evaluate whether the maintenance activities of the proposed program would result in significant impacts related to GHG emissions, climate change, and energy. Emissions associated with maintenance activities, including operation of off-road equipment such as bulldozers, excavators, pumps, and generators, material hauling vehicles, and worker commute vehicles, have been quantified. Emissions were estimated using CalEEMod version 2016.3.2. Flooding and bluff/shoreline erosion risks relating to sea level rise were evaluated qualitatively.

As described in Chapter 2, *Project Description*, the proposed program would involve various routine maintenance activities that would be conducted on an annual basis. To make conservative emission estimates, this analysis included the maximum number of sites expected to be completed in any year for each maintenance activity. Further details regarding the emission calculations and assumptions for the proposed program can be found in Appendix D. It is important to note that the proposed program would not substantially increase the amount or type of the County's maintenance activities conducted under existing conditions. Rather, the proposed program is intended to change the way maintenance activities are permitted and provides a consistent framework for implementing BMPs and mitigation measures. The County, however, may need to conduct slightly more maintenance work in the initial years of the program due to a backlog related to past permitting delays. Additional maintenance work may include more culvert replacement activities, bank stabilization, bridge maintenance, sediment removal activities, as well as pile burning, which has not been conducted frequently in recent years, in order to maintain fuel breaks and reduce vegetation density along park boundaries.

Fabrication of equipment and materials such as cement and steel require energy and, therefore, indirectly results in GHG emissions. These indirect GHG emissions associated with building materials are referred to as "embodied energy" and are based on life-cycle GHG emission analyses of individual materials. The embodied energy from construction materials has not been estimated for this analysis, as detailed specifications and estimates of materials are not available. For a typical maintenance project, the materials that have some of the largest amounts of embodied energy are cement and steel.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the County's environmental checklist and professional expertise, the proposed program would result in a significant impact on GHG emissions, climate change, and energy resources if it would:

- Generate GHG emissions (including methane), either directly or indirectly, that may have a significant impact on the environment;
- Conflict with an applicable plan (including a local climate action plan), policy or regulation adopted for the purpose of reducing the emissions of GHGs;
- Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation;

- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency;
- Result in the loss of forest land or conversion of forest land to non-forest use, such that it would release significant amounts of GHG emissions, or significantly reduce GHG sequestering;
- Expose new or existing structures and/or infrastructure (e.g., leach fields) to accelerated coastal cliff/bluff erosion due to rising sea levels;
- Expose people or structures to a significant risk of loss, injury or death involving sea level rise;
- Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or
- Place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows.

As described in Section 3.1.4, *Sections Eliminated from Further Analysis*, the proposed program's maintenance activities would be mostly confined to existing culverts, channels, bridges, flood control facilities, roads and trails, marina facilities, and vegetation near these facilities. Vegetation fuel management activities (e.g. selective tree thinning, removal of undergrowth and secondary tree growth) would also be conducted along County Park boundaries where adjacent properties could be at risk. Thus, the proposed program would not convert forest lands to non-forestland uses, nor would they result in the loss of forest land such that it would release significant amounts of GHG emissions or significantly reduce GHG sequestering. As such, no impact on forestry-related GHG emissions would occur.

The BAAQMD CEQA Guidelines included operation-related thresholds of significance for land use development and stationary-source projects. Stationary sources have a threshold of 10,000 MT CO_2e. For land use development projects, including residential, commercial, industrial, and public land uses and facilities, the threshold includes compliance with a qualified GHG reduction strategy or annual emissions of less than 1,100 MT CO_2e or efficiency performance criteria based on service population (BAAQMD 2017b). For this project, 1,100 MT CO_2e is the threshold used to evaluate operational GHG emissions, if any occur.

Environmental Impacts

Impact GHG-1: Generate GHG Emissions (*Less than Significant*)

The proposed program would generate GHG emissions through the combustion of fossil fuels during the operation of maintenance vehicles and equipment. Current annual GHG emissions from the County's maintenance activities (as detailed under Section 3.1.3, *Baseline Conditions*) were estimated to be 834 MT CO_2e, while the proposed program's estimated annual GHG emissions would be 1,011 MT CO_2e. Thus, the proposed program would generate an increase of 177 MT CO_2e from baseline conditions, which is less than the BAAQMD threshold of 1,100 MT CO_2e. These emissions would likely decrease over time as vehicles and equipment, in compliance with federal and state regulations and County goals, increase in efficiency and transition to low or no emission models. Carbon dioxide emissions from the proposed program's pile burning activities and sequestration by plants on County lands were not included in this analysis. Pile burning activities would be utilized as part of efforts to

decrease the risk and severity of wildfires and would help prevent larger uncontrolled releases of CO_2.

While not required to reduce the impact to a less than significant level, implementation of the BMP listed below would help reduce potential GHG emissions by minimizing idling and ensuring that equipment is properly maintained.

Applicable Best Management Practices

The County would implement the following BMP to further minimize temporary impacts on GHG emissions. A description of this BMP is provided in Table 2-3 in Chapter 2.

- BMP GEN -19: Dust Management Controls

Conclusion

The proposed program's impact regarding generating GHG emissions would be **less than significant**. The application of the above-listed BMP provides further avoidance and minimization of potential effects.

Impact GHG-2: Potential to Conflict with an Applicable Plan, Policy or Regulation Adopted for the Purpose of Reducing the Emissions of GHGs (*Less than Significant*)

The County of San Mateo has established a goal of reducing GHG emissions from Government Operations by 15% by 2020 and 80% by 2050 compared to a 2005 baseline. The proposed program would use fossil-fuel powered vehicles and equipment, and would not involve the construction of any facilities that would generate GHG emissions. Through its "Fuel Efficient County Vehicle Purchasing Policy," the County is continually increasing the fuel efficiency of its fleet by purchasing low or no emissions vehicles (County of San Mateo 2012), which would further reduce the proposed program's GHG emissions contribution above existing conditions.

In addition, as described above, the majority of GHG emissions generated by the County's operations are from the operation of buildings and employee commutes (approximately 83%). The proposed program activities would not conflict with any of the goals, policies, or implementation actions identified in the applicable GHG reduction plans, such as the *County of San Mateo Government Operations Climate Action Plan,* because the proposed program would not create any facilities that would generate future GHG emissions, and would be completed as efficiently as possible. The County Parks Department is structured by geographic divisions and each division has its own maintenance crew responsible for maintaining facilities within their division. The organization of the County Parks Department thereby reduces travel distance needed by staff since. Where feasible, maintenance activities conducted each year would be coordinated such that activities planned in the same geographic area would occur around the same time for efficiency purposes. Also, as described above under "Methodology," the proposed program would not substantially increase the amount or type of maintenance activities conducted relative to existing conditions. Additionally, by addressing routine maintenance issues before they worsen (i.e., bank repair, road slip-out), the scope of the repairs is often smaller as opposed to delaying the necessary work when conditions have likely worsened. Thus, the proposed program's emissions would not involve any activities that would conflict with the County's plans and reduction goals or

the statewide reduction goals related to AB 32, SB 32, and EO B-55-18, and would not represent a significant source of the County's GHG emissions. The proposed program would not conflict with any policies, plans, or regulations relating to GHG emission reductions.

Applicable Best Management Practices

None applicable.

Conclusion

For the reasons described above, this impact would be **less than significant.**

Impact GHG-3: Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation or conflict with or obstruct a state or local plan for renewable energy or energy efficiency (*Less than Significant*)

The proposed program's maintenance activities would require the consumption of energy (fossil fuels, electricity) for construction equipment, worker vehicles, and truck trips. The consumption of energy for the proposed program's equipment and vehicles would be minimized by minimizing vehicle idling and ensuring that equipment is properly tuned and maintained (BMP GEN-19). **Table 3.7-3** shows the proposed program's estimated annual fuel use from construction equipment, worker vehicles, and truck trips. It should be noted that the proposed program's fuel use would be a minor increase over the existing fuel consumption under baseline conditions, and would increase in proportion to the increase in work performed. The calculations used to develop these estimates are presented in Appendix D.

Table 3.7-3. Proposed Program's Fossil Fuel Use

Source Type	Diesel Fuel Use (gallons)	Gasoline Fuel Use (gallons)
Off-road Construction Equipment[1]	96,288	
Worker Vehicles[2]	17	3,561
Hauling & Vendor Vehicles[3]	7,568	

[1] Fuel use for off-road construction equipment was estimated using a fuel use factor from CARB's off-road in-use engine emissions model of 0.367 or 0.408 pounds of diesel per horsepower-hour (depending on vehicle horsepower) and diesel fuel density of 7.1089 pounds per gallon.

[2] Fuel use for construction worker vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 32.4 gallons per mile.

[3] Fuel use for hauling vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 5.9 gallons per mile.

The energy consumption during maintenance work is necessary for flood and fire hazard reduction, resource protection, and upkeep of County facilities. These activities would not cause wasteful, inefficient, and unnecessary consumption of energy or cause a substantial increase in energy demand and the need for additional energy resources. Although no mitigation measures are necessary to reduce this impact to a less-than-significant level, implementation of BMP GEN-19 would reduce the proposed program's effect by requiring

minimization of idling times and requiring that all equipment be maintained and tuned properly. As a result, the proposed program would not result in wasteful, inefficient, or unnecessary consumption of energy.

In addition, the County's activities would not conflict with any of the goals, policies, or implementation actions identified in the applicable energy plans, such as the 2018 *Integrated Energy Policy Report Update* and *County of San Mateo Government Operations Climate Action Plan* because the proposed program would not create any future energy demands and would be completed as efficiently as possible. Thus, the proposed program would not conflict with any plans relating to renewable energy or energy efficiency.

Applicable Best Management Practices

The County would implement the following BMP to further minimize temporary impacts on energy resources. A description of this BMP is provided in Table 2-3 in Chapter 2.

- BMP GEN-19: Dust Management Controls

Conclusion

The proposed program's effect on energy resources would be **less than significant**. The application of the above-listed BMP provides further avoidance and minimization of potential effects.

Impact GHG-4: Expose new or existing structures and/or infrastructure to accelerated coastal cliff/bluff erosion due to rising sea levels or expose people or structures to significant risk of loss, injury or death involving sea level rise (*Beneficial*)

The program does not include construction of new structures or infrastructure that would expose people or structures to sea level rise risks. The proposed program includes some maintenance sites in the vicinity of coastal cliffs/bluffs, which would be areas at potential risk of sea level rise and could potentially expose structures or people to related sea level risks. However, the proposed program's activities, including repairing or replacing culverts, roads and bridge maintenance, and repairing existing seawall revetments, would make the existing areas safer and more resilient to potential impacts from sea level rise than under existing conditions.

Maintenance activities at some County parks (e.g. Devil's Slide Trail, Fitzgerald Marine Reserve, Pillar Point Bluff and Mirada Surf West) would involve activities near coastal bluffs or cliffs including trail and road maintenance, weed or non-native plant removal, other vegetation maintenance activities, and minor facility repairs. As described in Section 3.6, *Geology, Soils, and Seismicity,* such maintenance activities at County parks are not anticipated to substantially increase coastal cliff or bluff erosion but may be required to address ongoing erosion of coastal cliffs or bluffs. Therefore, the proposed program would have a beneficial impact on reducing the long-term risks, and reduce the potential exposure of infrastructure, structures, or people to risk involving sea level rise. Temporary performance of these activities within coastal areas would not expose County employees to any significant risks involving sea level rise.

Applicable Best Management Practices

None applicable.

Conclusion

The proposed program would not expose new structures to accelerated coastal cliff/bluff erosion. Rather, the program would help improve conditions at existing County facilities including roads, bridges, trails and other storm drainage facilities and thereby help ensure facilities withstand effects of sea level rise. Therefore, this impact would be **beneficial**.

Impact GHG-5: Place structures within an anticipated 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map; or place within an anticipated 100-year flood hazard area structures that would impede or redirect flood flows. (*Beneficial*)

Some proposed maintenance activities would occur within designated and anticipated 100-year flood hazard areas including Pescadero Creek Road at Butano Creek and Belmont Creek at Old County Road. However, as described in Section 3.9, Impact HYD-3, proposed program activities would not place structures within 100-year flood hazard areas that could impede or redirect flood flows. Rather, proposed maintenance activities such as sediment and vegetation removal and culvert repair and replacement, would restore instream infrastructure and culverts to their design capacity.

Applicable Best Management Practices

None applicable.

Conclusion

Overall, the proposed program would improve existing conditions as they relate to flood hazards. Therefore, the proposed program's impact to structures and flood flows within 100-year flood hazard areas would be **beneficial**.

3.8 HAZARDS AND HAZARDOUS MATERIALS

This section describes the existing conditions of the County of San Mateo Routine Maintenance Program (proposed program) area and regulatory setting with respect to hazards and hazardous materials. The environmental setting section identifies areas potentially affected by known hazardous materials in soil or groundwater, as well as by wildfire hazards. This section also includes the significance criteria and methodology used to evaluate the potential impacts of the proposed program related to hazardous materials.

3.8.1 ENVIRONMENTAL SETTING

Schools

Schools that are located throughout San Mateo County are shown in **Figure 3.8-1**.

Hazardous Materials in Soil and Groundwater

In San Mateo County, hazardous materials may be found in soil and groundwater, primarily in areas associated with past land uses involving hazardous materials storage or disposal, such as gas stations, industrial plants, dry cleaning facilities, military uses, landfills, etc. Figure 3.8-1 shows the location of documented open hazardous materials clean-up sites, as identified by State Water Resources Control Board (SWRCB) and California Department of Toxic Substances Control (DTSC).

Airports

Airports in San Mateo County include San Francisco International Airport, Half Moon Bay Airport, and San Carlos Airport. These airports are shown in Figure 3.8-1.

Emergency Response and Evacuation

Evacuation routes are not specifically identified in San Mateo County. The County of San Mateo General Plan (1986) states that "the County does not actively promote the preparation of disaster response plans for major fires that specify evacuation routes, identify areas that may be isolated, and define reconstruction policies." The General Plan also notes that evacuation of residents from remote areas could be problematic due to rural roads potentially being incapable of accommodating two-way traffic during an emergency and lack of secondary means of access to many remote parcels (County of San Mateo 1986). The County does have an Emergency Operations Plan (San Mateo County Sheriff's Office 2015) (see further discussion under Section 3.8.2 below), which establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within San Mateo County.

Some jurisdictions within San Mateo County where maintenance activities would occur, however, do specify evacuation routes, such as the Town of Woodside, which prepared an Evacuation Plan (Woodside Fire Protection District No Date). The City of San Mateo states that in the event of an emergency, the major arterial streets identified in the Circulation

Element would serve as principal evacuation routes (City of San Mateo 2010). In general, major arterials would serve as evacuation routes throughout San Mateo County, as well as potentially smaller roads in remote areas. Major highways providing regional access, such Highway 1, Interstate-280, and Highway 101 also would be used in the event of a large-scale evacuation. Refer to Section 3.14, *Transportation and Traffic* for additional information on the region's transportation system.

Wildland Fire Hazards

A significant portion of San Mateo County is mapped as Very High Fire Hazard Severity Area, including principally the forested areas east of Half Moon Bay and Moss Beach (California Department of Forestry and Fire Protection [CAL FIRE] 2007) (see Figure 3.16-1). Much of the southern area of San Mateo County is mapped as High Fire Severity. The Bayside (draining to San Francisco Bay) portion San Mateo County is largely within Local Responsibility Areas and may be presumed to be somewhat less prone to wildfires given its more developed state.

CAL FIRE's Very High Fire Hazard Severity Zone designation indicates areas where the physical conditions (e.g., vegetation, topography, weather, crown fire potential, ember production and movement) create a very high likelihood that the area will burn over a 30 to 50-year time period, and potentially will burn at a high intensity and speed (CAL FIRE 2012).Wildland fire hazards are discussed in greater detail in Section 3.16, *Wildfire.*

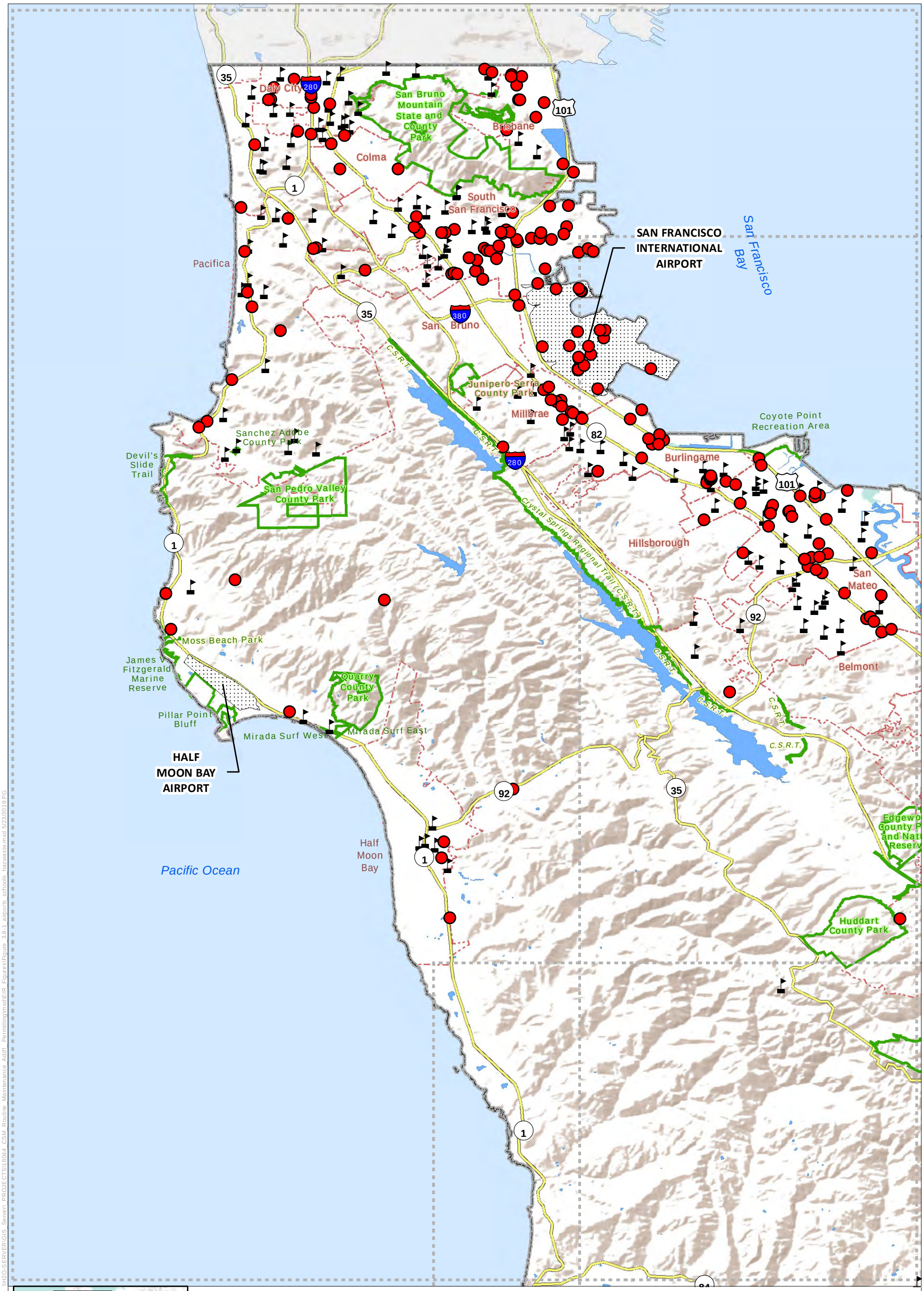

Figure 3.8-1
Schools, Airports, and Hazardous Materials Sites within San Mateo County

San Mateo County Routine Maintenance Program

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SAN FRANCISCO INTERNATIONAL AIRPORT

San Francisco Bay

Coyote Point Recreation Area

Burlingame

Hillsborough

San Mateo

Foster City

SAN CARLOS AIRPORT

Redwood City

Belmont

San Carlos

Flood County Park

Friendship Park

East Palo Alto

Atherton

Menlo Park

Edgewood county Park and Nature Reserve

Huddart County Park

Woodside

Wunderlich County Park

Alpine Trail

Portola Valley

Sam McDonald County Park

Memorial County Park

Pescadero Creek County Park

C.S.R.T.

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Open Hazardous Waste Site
Schools
Airport Boundaries
San Mateo County Parks
Highway / Major Road
Incorporated City
Water Feature
San Mateo County Boundary
Sheet Index

N

0 2 Miles

Source: San Mateo County GIS 2018

Horizon WATER and ENVIRONMENT

Figure 3.8-1
Schools, Airports, and Hazardous Materials Sites within San Mateo County

San Mateo County Routine Maintenance Program

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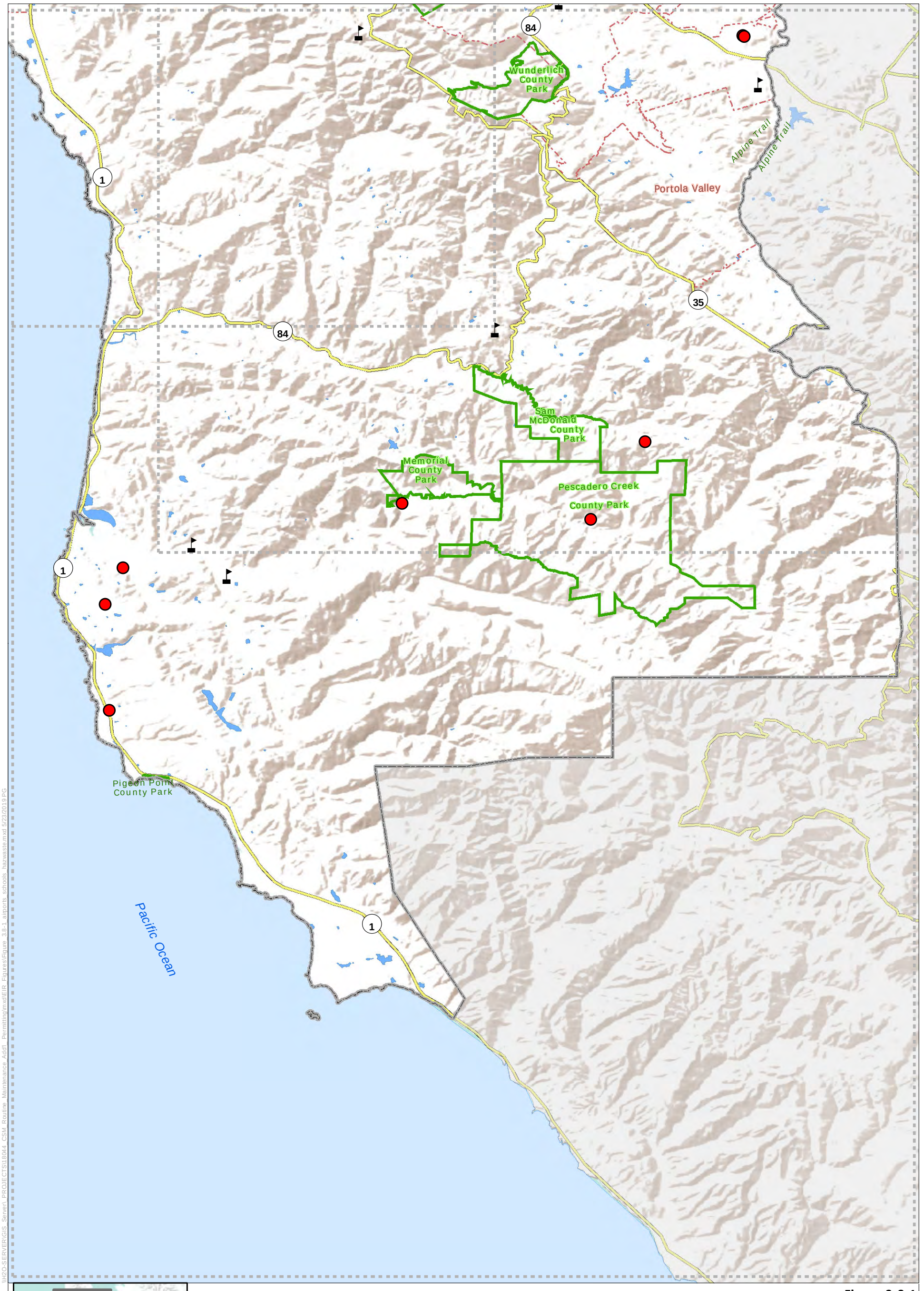

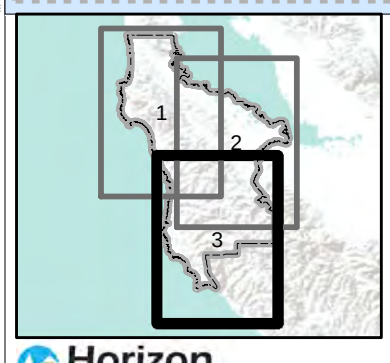

Open Hazardous Waste Site
Schools
Airport Boundaries
San Mateo County Parks
Highway / Major Road
Incorporated City
Water Feature
San Mateo County Boundary
Sheet Index

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0 2
Miles

Source: San Mateo County GIS 2018

Figure 3.8-1
Schools, Airports, and Hazardous Materials Sites within San Mateo County

San Mateo County Routine Maintenance Program

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3.8.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also called the Superfund Act) (42 U.S. Code [USC] Section 9601 *et seq.*) is intended to protect the public and the environment from the effects of past hazardous waste disposal activities and new hazardous material spills. Under CERCLA, U.S. Environmental Protection Agency (USEPA) has the authority to identify the parties responsible for hazardous materials releases and to ensure their cooperation in site remediation. CERCLA also provides federal funding (through the "Superfund") for the remediation of hazardous materials contamination. The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499) amends some provisions of CERCLA and provides for a Community Right-to-Know program.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) (42 USC Section 6901 *et seq.*) was enacted in 1976 as an amendment to the Solid Waste Disposal Act to address the nationwide generation of municipal and industrial solid waste. RCRA gives USEPA the authority to control the generation, transportation, treatment, storage, and disposal of hazardous waste, including underground storage tanks storing hazardous substances. RCRA also establishes a framework for the management of nonhazardous wastes. RCRA addresses only active and future facilities; it does not address abandoned or historical sites, which are covered by CERCLA (as described above).

Federal Insecticide, Fungicide, and Rodenticide Act

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) (7 USC Section 136 *et seq.*) was enacted in 1947. The purpose of FIFRA is to establish federal jurisdiction over the distribution, sale, and use of pesticides. Key provisions of FIFRA require pesticide applicators to pass a licensing examination for status as "qualified applicators," create a review and registration process for new pesticide products, and provide for thorough and understandable labeling that includes instructions for safe use.

Occupational Safety and Health Administration Regulations

The Occupational Safety and Health Act of 1970 created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful conditions for workers by setting and enforcing standards and by providing training, outreach, education, and assistance. To fulfill this purpose, OSHA develops and enforces mandatory job safety and health standards.

These standards, codified in 29 Code of Federal Regulations (CFR) Part 1910, address issues that range in scope from walking and working surfaces, to exit routes and emergency planning, to hazardous materials and personal protective equipment (PPE). They include exposure limits for a wide range of specific hazardous materials, including pesticides, as well as requirements that employers provide PPE (i.e., protective equipment for eyes, face, or extremities; protective clothing, and respiratory devices) to their employees wherever it is necessary (i.e., when required by the label instructions) (29 CFR Section 1910.132).

State Laws, Regulations, and Policies

California state regulations, which are equal to or more stringent than federal regulations, require those handling hazardous wastes to plan for and manage such wastes to handle, store, and dispose of them properly, to reduce risks to human health and the environment.

Hazardous Waste Control Act

The Hazardous Waste Control Act of 1972 created the Hazardous Waste Management Program, which is similar to, but more stringent than, the federal program under RCRA. The Hazardous Waste Control Act is implemented by regulations contained in Title 26 of the CCR. These regulations list more than 800 materials that may be hazardous and establish criteria for their identification, packaging, and disposal. Under the Hazardous Waste Control Act and 26 CCR, hazardous waste generators must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with DTSC.

Pesticide Regulations

USEPA has delegated primary authority to CDPR to enforce federal and state laws pertaining to the proper and safe use of pesticides. County Agricultural Commissioners (CACs) and their staffs are largely responsible for the in-field enforcement of CDPR's pesticide use regulations in California's 58 counties. Personnel from CDPR's headquarters and CDPR field staff provide training, coordination, technical, and legal support to the counties.

Title 3 CCR, Division 6 describes the role of CDPR and provides guidance related to pesticide regulatory programs; pesticides (including pesticide registration and the identification and use of restricted materials); licensing, work requirements, and pesticide-related worker safety during pest control operations; and environmental protection for groundwater, air quality, aquatic and marine environments, surface water, and compost. The CACs, on behalf of CDPR, are responsible for enforcement of these human health and environmental protections in the field.

General NPDES Pesticide Use Permit for Aquatic Weed Control

SWRCB has adopted a general National Pollutant Discharge Elimination System (NPDES) permit (Water Quality Order No. 2013-0002-DWQ, General Permit No. CAG990005) for the regulation of residual aquatic pesticides to control aquatic weeds in waters of the United States. This General Permit authorizes the discharge of the following aquatic pesticides: 2,4-D, acrolein, copper, diquat, endothall, fluridone, glyphosate, imazapyr, sodium carbonate peroxyhydrate, and triclopyr-based algaecides and aquatic herbicides. Aquatic pesticides that are applied to waters of the United States in accordance with FIFRA label requirements are not considered pollutants; however, pesticides or byproducts that persist in or leave the treatment area after a specified treatment period are considered pollutants and require coverage under this General Permit.

To obtain coverage under the NPDES General Permit, a discharger must comply with all of the monitoring, reporting, and other restrictions detailed in the permit. First, an applicant must submit a Notice of Intent, a vicinity map, and an annual fee to the applicable Regional Water Quality Control Board (RWQCB) to apply for coverage under the permit. An applicant must comply with the specific monitoring requirements identified in the permit and must submit reports annually (at least) to the applicable RWQCB. The General Permit for weed

control requires that dischargers comply with effluent limitations, including developing and implementing an aquatic pesticide application plan and complying with applicable receiving-water limitations. A discharger covered by the permit must follow all pesticide label instructions and any terms contained in use permits issued by CACs. In addition, applicators of a pesticide designated as a restricted material either must be licensed by CDPR or must work under the supervision of a licensed professional.

Healthy School Act of 2000 (California Education Code, Sections 17608–17613)

The Healthy School Act of 2000 restricts the use of certain pesticides at school sites and requires noticing for application of approved pesticides at schools. Under Section 17610 of the California Education Code, the use of a pesticide on a school site is prohibited if that pesticide is granted a conditional registration, an interim registration, or an experimental use permit by CDPR, or if the pesticide is subject to an experimental registration issued by USEPA, and (a) the pesticide contains a new active ingredient or (b) the pesticide is for new use. The use of a pesticide on a school site is prohibited if CDPR cancels or suspends registration, or requires phase-out of use, of that pesticide.

Under Section 17611 of the California Education Code, each school site must keep records of all pesticide use at the school site for a period of 4 years, and make such information available to the public. Under Section 17612, the school designee must annually provide to all staff and parents/guardians of pupils written notification of the names of all pesticide products (as well as product active ingredients) that are expected to be applied at the school site in the upcoming year. The school designee must post a warning sign in each area of the school site where pesticides are to be applied, displaying the pesticide product's name, manufacturer's name, USEPA's product registration number, intended date and areas of application, and reason for the pesticide applications.

Emergency Services Act

Under the Emergency Services Act, the State of California developed a plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services. This office coordinates the responses of other agencies, including USEPA, the California Highway Patrol, the nine RWQCBs, the various air quality management districts, and County disaster response offices.

California Occupational Safety and Health Administration Standards

Title 8 of the California Occupational Safety and Health Administration (Cal/OSHA) regulations specifies that workers who may be exposed to contaminated soils, vapors that could be inhaled, or groundwater containing hazardous levels of constituents are subject to monitoring and personal safety equipment requirements that specifically address airborne contaminants. The primary intent of the Title 8 requirements is to protect worker health.

Local Laws, Regulations, and Policies

Please refer to Appendix C for applicable goals and policies in General Plans for jurisdictions where maintenance activities may occur within San Mateo County. Other applicable local plans and policies are described in the subsections below.

Airport Land Use Compatibility Plans

Airport Land Use Compatibility Plans (ALUCPs) generally are designed to encourage compatible land uses in the vicinity surrounding an airport by providing for the "orderly growth of each public airport and the area surrounding the airport" while safeguarding "the welfare of the inhabitants within the vicinity of the airport and the public in general (City/County Association of Governments of San Mateo County [C/CAG 2015])." ALUCPs describe existing and planned uses in the vicinities of airports, and define noise exposure contours for land uses near airports. ALUCPs also typically provide a figure showing the boundaries of Federal Aviation Administration (FAA) structure height requirements to protect navigable airspace. ALUCPs have been prepared for the three airports located in San Mateo County, as follows:

- Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport (C/CAG 2012).
- Final Airport Land Use Compatibility Plan for the Environs of Half Moon Bay Airport (C/CAG 2014).
- Draft Final Comprehensive Airport Land Use Compatibility Plan for the Environs of San Carlos Airport (C/CAG 2015).

County of San Mateo Emergency Operations Plan

The County of San Mateo has prepared an Emergency Operations Plan (EOP) which establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the San Mateo County Operational Area (San Mateo County Sheriff's Office 2015). The overall objective of emergency management is to ensure the effective coordination of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents and national security emergencies.

San Mateo County Hazard Mitigation Plan

In 2016, the County in coordination with its incorporated municipalities and multiple special districts, updated its multi-hazard mitigation plan (HMP). The HMP identifies long-term and short-term policies, programs, projects and other activities to alleviate death, injury and property damage that can result from a disaster. The types of hazards identified and

described throughout the HMP include earthquakes, dam failure, drought, wildfire, flooding, landslide, tsunami, and climate change. This plan complies with requirements for hazard mitigation planning to maintain eligibility for funding under FEMA grant programs. The HMP also serves other purposes including enhancement of public awareness, establishes a decision tool for management, promotes compliance with State and Federal program requirements, enhances local policies for hazard mitigation, supports viability after a hazard event, and provides inter-jurisdictional coordination. (County of San Mateo 2016)

3.8.3 IMPACT ANALYSIS

Methodology

This analysis used a qualitative approach to assess the potential for proposed program activities to result in adverse impacts related hazards and hazardous materials. The assessment and significant determinations were guided by the significance criteria provided in the California Environmental Quality Act (CEQA) Guidelines and the County's environmental checklist, which are provided below. The analysis took into account the implementation of applicable best management practices (BMPs) and adherence to existing laws and regulations. Where appropriate and feasible, mitigation measures were identified to reduce potentially significant impacts.

Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines, the County's environmental checklist, and professional expertise, the proposed program would result in a significant impact on hazards or hazardous materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials (e.g., pesticides, herbicides, other toxic substances, or radioactive material) or the reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or wastes within 0.25 mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5, and as a result, create a significant hazard to the public or the environment;
- Result in a safety hazard or excessive noise for people residing or working in the proposed Project area if the project is within the jurisdiction of an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport or private airstrip;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Environmental Impacts

Impact HAZ-1: Create a Significant Hazard to the Public or the Environment from the Routine Transport, Use, or Disposal of Hazardous Materials (*Less than Significant with Mitigation*)

The proposed program would involve the routine transport, use, and disposal of hazardous materials, such as pesticides, herbicides, fuel, oil, solvents, and related materials. For example, for vegetation management activities, the County may need to transport herbicides to the project site, use herbicides to control nuisance vegetation, and then dispose of herbicide containers or applicator equipment after completing the job. For other types of projects (e.g., road and bridge repair, sediment removal, bank stabilization, etc.), the County would use heavy construction equipment that would require fuel, oil, lubricants, and other potentially hazardous materials. It is also possible that proposed program activities could encounter contaminated soil or water, which would require transport and disposal.

Such routine transport, use, and disposal of hazardous materials could potentially create a hazard to the public or the environment (e.g., if workers did not wear appropriate PPE when applying herbicides, or if hazardous materials were not disposed of in proper locations or at approved facilities). However, as described in Section 3.8.2, existing laws require that the County or its contractors provide workers with PPE to limit exposure to potentially harmful hazardous materials (e.g., those regulated by OSHA). The Hazardous Waste Control Act also requires that the County track and dispose of its hazardous waste at approved facilities. Compliance with these existing laws and regulations would greatly reduce the potential for proposed program activities to create a significant hazard to the public of the environment. Additionally, implementation of BMPs, as identified below, would minimize potential for improper storage, handling, use, transport, and disposal of hazardous materials.

If proposed program activities involving ground disturbance were to encounter contaminated soil, sediment, or groundwater, this could potentially expose workers, the public, or the environment to hazards if adequate precautions are not taken. Implementation of **Mitigation Measure HAZ-1** would minimize potential impacts in this scenario.

Applicable Best Management Practices

The County would implement the following BMPs to minimize temporary impacts. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP ST-1: Testing and Disposal of Sediment

Conclusion

With implementation of the above-listed BMPs, impacts associated with the majority of hazardous materials transport, use, and disposal that would occur under the proposed program would be less than significant. Although less frequent, encounters with

contaminated soil, sediment, or groundwater would remain potentially significant. Implementation of Mitigation Measure HAZ-1 would reduce this impact to **less than significant with mitigation**.

> **Mitigation Measure HAZ-1: Proper Handling and Disposal of Contaminated Soil, Sediment, and Groundwater**
>
> Prior to initiating ground-disturbing activities, the County or its contractors will inspect the soil, sediment, or groundwater for the presence of possible contamination. If indicators of contamination (e.g., foul odor, staining or sheen, etc.) are found, the County or its contractors will then test the soil. If the lab results confirm contamination is present, the soil, sediment, or groundwater will be treated as hazardous and dispose of the material at an approved hazardous waste disposal facility. In removing potentially contaminated soil, sediment, or groundwater, workers will wear protective clothing and equipment to limit their exposure.

Impact HAZ-2: Create a Significant Hazard to the Public or the Environment through Reasonably Foreseeable Upset or Accident Conditions Involving the Release of Hazardous Materials (*Less than Significant*)

Hazardous materials used in proposed program activities (e.g., pesticides, herbicides, fuel, oil, lubricants, solvents, etc.) could potentially be released to the environment through upset or accident conditions if adequate precautions are not taken. Such a release could harm aquatic or terrestrial organisms and pose a hazard to construction workers and/or the public. Implementation of the BMPs listed below would minimize potential for accidental releases, as they would require proper storage of hazardous materials, including secondary containment, and implementation of spill prevention and control measures.

Applicable Best Management Practices

The County would implement the following BMPs to minimize temporary impacts. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling

Conclusion

With implementation of the above-listed BMPs, this impact would be **less than significant**.

Impact HAZ-3: Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Wastes within 0.25 Mile of an Existing or Proposed School (*Less than Significant*)

In general, most proposed program activities would not occur within 0.25-mile of a school. Proposed program activities would typically occur within existing County parks, along County maintained roads and channels, and at closed landfills (e.g., the Pescadero Landfill

and Half Moon Bay Landfill) and County-owned airports (e.g., Half Moon Bay Airport and San Carlos Airport). However, it is possible that a school could be located in close proximity to a maintenance/project site. **Table 3.8-1** shows anticipated routine maintenance sites within 0.25-mile of a school.

Table 3.8-1. Anticipated Routine Maintenance Sites within 0.25-Mile of a School

ID	Maintenance Site Name	School(s) Within 0.25-Mile	Distance to School(s) (Miles)
1	San Bruno Mountain State and County Park	Mills Montessori	0.08
		John F. Kennedy Elementary School	0.04
		Panorama Elementary School	0.21
		Hilldale School	0.06
		Hillside Christian Academy	0.05
24	Sanchez Adobe County Park	Alma Heights Christian Academy	0.03
		Linda Mar Educational Center School	0.17
32	Mirada Surf West County Park	El Granada Elementary School	0.12
46	Obispo Road at Avenue Portola	Wilkinson School	0.18
47	Obispo Road	El Granada Elementary School	0.20
59	Pescadero Creek Road at Cloverdale Road (Pescadero Creek)	Pescadero Elementary and Middle School	0.23

Note: Anticipated routine maintenance sites refer to maintenance sites that are identified and described in the County's Routine Maintenance Manual (Appendix B). The maintenance site ID and name correspond to the identifiers in the Routine Maintenance Manual (refer to Figures B-1 through B-7 and Tables B-1 and B-2 [Appendix B of this DEIR]).

Heavy construction equipment used in proposed program activities would emit some diesel exhaust and related emissions that can be hazardous. In general, these emissions (if they were to occur in close proximity to a school) would be similar to emissions associated with road construction projects and other construction projects, which, by necessity, must occur in proximity to a school from time to time. While the amount and duration of the emissions would depend on the specific characteristics of the maintenance project, the emissions would not pose an acute health hazard to children at any nearby school.

The proposed program would transport, store, use, and dispose of hazardous materials, such as pesticides, herbicides, fuel, oil, lubricants, and solvents. While it is possible that such handling of materials could occur in proximity to a school, these activities would not pose a significant health hazard to school children. As described in Impact HAZ-1 and HAZ-2, the proposed program would implement BMPs that would require safe storage, handling, and disposal of hazardous materials and minimize the potential for accidental releases of hazardous materials to the environment.

As described in Chapter 2, the proposed program involves very limited use of herbicides as these would be limited to control invasive plants on County-owned parcels in Pescadero (e.g. closed landfill), the Half Moon Bay Airport, and would be used sparingly in open space areas within County parks. If pesticide or herbicide use were to be required in immediate proximity to, or within, school grounds, the County would be required to follow the Healthy Schools Act

and implementing regulations in the California Education Code. Compliance with these existing laws and regulations would minimize potential hazards from pesticide or herbicide use.

Applicable Best Management Practices

The County would implement the following BMPs to minimize temporary impacts. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GEN-7: Spill Prevention and Control

Conclusion

With implementation of the above-listed BMPs, this impact would be **less than significant**.

Impact HAZ-4: Result in a Significant Hazard to the Public or the Environment from Location on a Known Hazardous Materials Site (*Less than Significant with Mitigation*)

Proposed program activities would be unlikely to occur on documented hazardous materials sites that are listed pursuant to California Government Code Section 65962.5. Routine maintenance activities would typically occur within existing County parks, along County maintained roads and channels, and at closed landfills (e.g., the Pescadero Landfill and Half Moon Bay Landfill) and County-owned airports (e.g., Half Moon Bay Airport and San Carlos Airport). Of the known maintenance sites identified in Figures B-1 through B-7 and Tables B-1 and B-2 of the County's Routine Maintenance Manual (see Appendix B of this draft environmental impact report [DEIR]), only one site (Pescadero County Park) was located on a documented hazardous materials site (i.e., leaking underground storage tank cleanup site). Hazardous materials clean-up sites are most frequently associated with past land uses, such as gas stations, industrial plants, dry cleaning facilities, and related uses that lend themselves to potential contamination of underlying soils; therefore, proposed program activities would not typically occur in these areas. However, it is possible that a future maintenance activity involving ground disturbance may be required on a site that is listed as an open or active clean-up site in GeoTracker or EnviroStor databases. In such an instance, maintenance workers could be subjected to potential hazards from contaminated soil that may be present on the site. For sediment removal activities, BMP ST-1 (Testing and Disposal of Sediment) involves proper testing to determine suitability for potential reuse and appropriate disposal of sediment if hazardous levels of contaminants are encountered. While BMP ST-1 helps minimizes the risk of encountering hazardous materials during sediment removal work, this measure is not mandatory for all sediment removal activities and other proposed maintenance activities have potential to expose maintenance works to contaminated soil. Therefore, this impact would be potentially significant. With implementation of Mitigation Measure HAZ-2, the impact would be **less than significant with mitigation.**

Applicable Best Management Practices

The County would implement the following BMP to minimize temporary impacts. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP ST-1: Testing and Disposal of Sediment

Conclusion

As described above, it is possible that future unknown maintenance sites may be located on an open or active clean-up site, which would be considered a potentially significant impact. Implementation of Mitigation Measure HAZ-2 would reduce this impact to **less than significant with mitigation**.

Mitigation Measure HAZ-2: Review of Proximity to Existing Known Hazardous Materials Clean-up Sites and Implementation of Safety Precautions

The County and/or its contractors will evaluate the proximity of proposed maintenance sites that involve ground-disturbing activities to existing known hazardous material clean-up sites. This review will include examination of the planned maintenance activity footprint in relation to records of hazardous materials sites in the State Water Resources Control Board's GeoTracker database and the Department of Toxic Substances Control's EnviroStor database.

If the proposed maintenance activity is located on or within 100 feet of a documented hazardous material contamination site, for which clean-up activities have not been completed or been successful, the County and/or its contractors will commission a Phase I Environmental Site Assessment to more fully characterize the past land uses and potential for soil and/or groundwater contamination to occur at or in close proximity to the site.

If the Phase I Environmental Site Assessment demonstrates a reasonable likelihood that contamination remains within the proposed maintenance activity's area of disturbance, the County and/or its contractors will commission a Phase II Environmental Site Assessment, including soils testing, to characterize the extent of the contamination and develop ways to avoid the contaminated areas during maintenance activities. The County will follow all recommendations of the Phase II Environmental Site Assessment and conduct the proposed maintenance to avoid areas of contamination, to the extent feasible. In the event that it is not feasible to avoid all areas of contamination, the County and/or its contractors will follow all applicable laws regarding management of hazardous materials and wastes. This includes proper disposal of any contaminated soil in a hazardous waste landfill, and ensuring that workers are provided with adequate personal protective equipment to prevent unsafe exposure.

Impact HAZ-5: Result in a Safety Hazard or Excessive Noise for People Residing or Working in the Program Area within the Jurisdiction of an Airport Land Use Plan or within 2 Miles of an Airport or Private Airstrip (*Less than Significant*)

The proposed program would include vegetation management activities at two County-owned airports within the jurisdiction of ALUCPs: the Half Moon Bay Airport and San Carlos Airport. Primary maintenance work at the Half Moon Bay Airport involves controlling jubata grass growth at the airport runway through a combination of mechanical methods and herbicide applications. Other maintenance activities that may occur within 2 miles of an airport would be limited to other routine maintenance activities such as sediment removal,

vegetation management, roadway and culvert repair, etc. Many of the routine maintenance activities conducted at these airports are like those conducted under existing conditions and workers at these facilities are accustomed to the temporary noise generated by these activities. The proposed program would not involve construction of any new housing or structures at these two airports or any other airports. As such, the proposed vegetation management activities that would be conducted at the Half Moon Bay and San Carlos airports would not introduce people permanently to an area that could be subject to safety hazards or excessive noise. Likewise, the proposed program activities would not introduce any new structures to the area that could exceed height limitations for protection of navigable airspace.

Applicable Best Management Practices

No BMPs are applicable to this impact.

Conclusion

This impact would be **less than significant**. No mitigation is required.

Impact HAZ-6: Impair Implementation of or Physically Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan (*Less than Significant*)

Proposed program activities that occur within existing County parks, County regional trails, County landfills are not expected to interfere with emergency response or evacuation operations. To the extent proposed program activities involve work within County roadways or County road right-of-way (road shoulders), or operation of heavy construction equipment on roadways, such activities could potentially interfere with traffic movement and impair evacuation procedures in the event of an emergency. Such activities include road repaving, slip-out/slide repairs, culvert repair/replacement, and roadside ditch maintenance, and vegetation management activities along County roads. As noted in Section 3.8.1 above, small rural roads in the County may be used as evacuation routes, and these roads could be impacted if County activities required temporary closure of one lane of traffic during construction activities. In the long run, however, repair of slip-outs/slides on County roads would benefit access for emergency vehicles and evacuation of residents for certain areas of San Mateo County. Similarly, maintaining vegetation along County roads would be conducted for the purposes of ensuring visibility for motorists and thereby result in a benefit for emergency vehicle access and evacuation.

Implementation of the BMPs described below would reduce the potential for proposed program activities to impair implementation of, or physically interfere, with an adopted emergency response plan or emergency evacuation plan.

Applicable Best Management Practices

The County would implement the following BMPs to minimize temporary impacts. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

Conclusion

With implementation of the above BMPs, this impact would be **less than significant.**

Impact HAZ-7: Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Wildland Fires (*Less than Significant*)

The proposed program would not involve construction of any new structures or homes. As a result, the proposed program would have no potential to expose new structures to a significant risk of loss involving wildland fires. The County's routine maintenance activities could take place in remote areas that are within a Very High Fire Hazard Severity Zone. Although unlikely, if a wildfire were to occur while maintenance crews are in the area, this could expose County workers to risk of injury or death involving wildland fires. Because this is a relatively unlikely scenario, and there would most likely be some warning or warning signs that would allow for individuals to escape, this impact is considered less than significant.

Refer to Section 3.16, *Wildfire* for discussion of how proposed program activities themselves could ignite or increase the risk of wildfire.

Applicable Best Management Practices

No BMPs are applicable to this impact.

Conclusion

This impact would be **less than significant**. No mitigation is required.

3.9 HYDROLOGY AND WATER QUALITY

This section discusses existing conditions and evaluates the County of San Mateo Routine Maintenance Program's (proposed program's) effects related to hydrology and water quality. Federal, state, and local regulations related to hydrology and water quality are also described.

3.9.1 ENVIRONMENTAL SETTING

The proposed program area can be divided into two physiographic regions: (1) San Mateo County areas draining to San Francisco Bay (Bayside); and (2) San Mateo County areas draining to the Pacific Ocean (Coastside). The Santa Cruz Mountains separate these physiographic regions and direct the principal drainage patterns and directions to San Francisco Bay (Bay) or the Pacific Coast.

The main watersheds and creeks included in the proposed program are shown in **Figures 3.9-1 and 3.9-2,** and discussed below. Note that the proposed program is limited to maintenance activities in unincorporated areas of San Mateo County, County parks, and a few locations of County-maintained facilities and County parks within incorporated cities.

Subwatersheds

Bayside

The Bayside region encompasses the area extending from the San Mateo/San Francisco County line south to the San Mateo/Santa Clara County line. The Bayside region is generally defined by the ridgeline of the Santa Cruz Mountains to the west and the Bay to the east.

The northern and eastern portions of the Bayside region, occupying the foothills and the Bay plain, are largely developed. Due to urbanization, most historic waterways have been significantly modified or culverted in these areas. In the area west of Interstate-280 (I-280), residential and mixed urban development extend into the foothills of the Santa Cruz Mountains, while upper watershed areas remain mostly undeveloped.

San Bruno Mountain, a 4-mile long, northwest trending ridgeline in South San Francisco, is a prominent topographic feature in the northwest corner of San Mateo County (see Figure 3.9-1, Sheet 1). Colma Creek separates the Santa Cruz Mountains and San Bruno Mountain. Further south, the topography of the Bayside region includes the northern extent of the Santa Cruz Mountains, a series of moderate, northwest trending ridges and valleys that occupy or parallel the San Andreas Fault Zone, and the gentle plain along the Bay margin (Bay plain) (see Figure 3.9-1, Sheets 1 and 2). The San Andreas Lake, Upper Crystal Springs and Lower Crystal Springs Reservoirs lie in the Santa Cruz Mountains, along the San Andreas Fault Zone. In the lower watershed, the area near the Bay shoreline supports an elaborate system of sloughs, estuarine marshes, and salt ponds (see Figure 3.9-1 Sheets 1 and 2). Major waterways in the Bayside region (from north to south) are listed below in **Table 3.9-1**.

Table 3.9-1. Major Watershed Areas and Surface Waters in the Bayside Region

Hydrologic Unit Code (HUC) Cataloging Units	Names of HUCs	Major Waterbodies within the HUC
180500040904	Visitacion Valley – Frontal San Francisco Bay Estuaries	N/A
180500040903	Colma Creek-Frontal San Francisco Bay Estuaries	Colma Creek; San Bruno/El Zanjon Creek; Mills Creek; Easton Creek; Sanchez Creek
180500040901	San Mateo Creek, Frontal San Francisco Bay Estuaries	San Mateo Creek; San Andreas Lake; Lower Crystal Springs Reservoir
180500041001	San Francisco Bay Estuaries	San Francisco Bay
180500040902	Cordilleras Creek – Frontal San Francisco Bay Estuaries	Laurel Creek; Belmont Creek; Pulgas Creek; Cordilleras Creek; Redwood Creek; Atherton Creek
180500040901	San Mateo Creek, Frontal San Francisco Bay Estuaries	Upper Crystal Springs Reservoir
180500030404	San Francisquito Creek	San Francisquito Creek
180500041001	San Francisco Bay Estuaries	San Francisco Bay; Ravenswood Slough; other sloughs

Coastside

The boundary of the Coastside region extends from the San Mateo/San Francisco County line south to the San Mateo/Santa Cruz County line. The Coastside region is generally defined by the Santa Cruz Mountains ridgeline to the east and the Pacific coastline to the west.

The northwest trending Santa Cruz Mountains traverse the length of San Mateo County and generally defines the topography in the Coastside region. Much of the topography between Pacifica and Moss Beach is steep with watershed headlands dropping quickly to the coast. The northern portion of the Coastside region is a relatively narrow area along the Pacific coast with Montara Mountain separating the Linda Mar community to the north, and Montara and Moss Beach to the south (see Figure 3.9-2, Sheet 1). South of Moss Beach, a broad, relatively flat coastal terrace begins near Half Moon Bay and continues south to Lobitos Creek (see Figure 3.9-2, Sheets 2-3). South of Lobitos Creek, topography steepens again with intermittent, narrow coastal terrace areas.

Urban development in the Coastside region is focused primarily around Daly City and Pacifica in the northern portion of the region and in and around many smaller communities situated along the coastline and lower alluvial valleys. State and County parkland, open space preserves, and the steep topography help preserve most of the Coastside region as natural lands. However, the coastal terraces and alluvial valleys support farming and livestock grazing outside of the open space preserves.

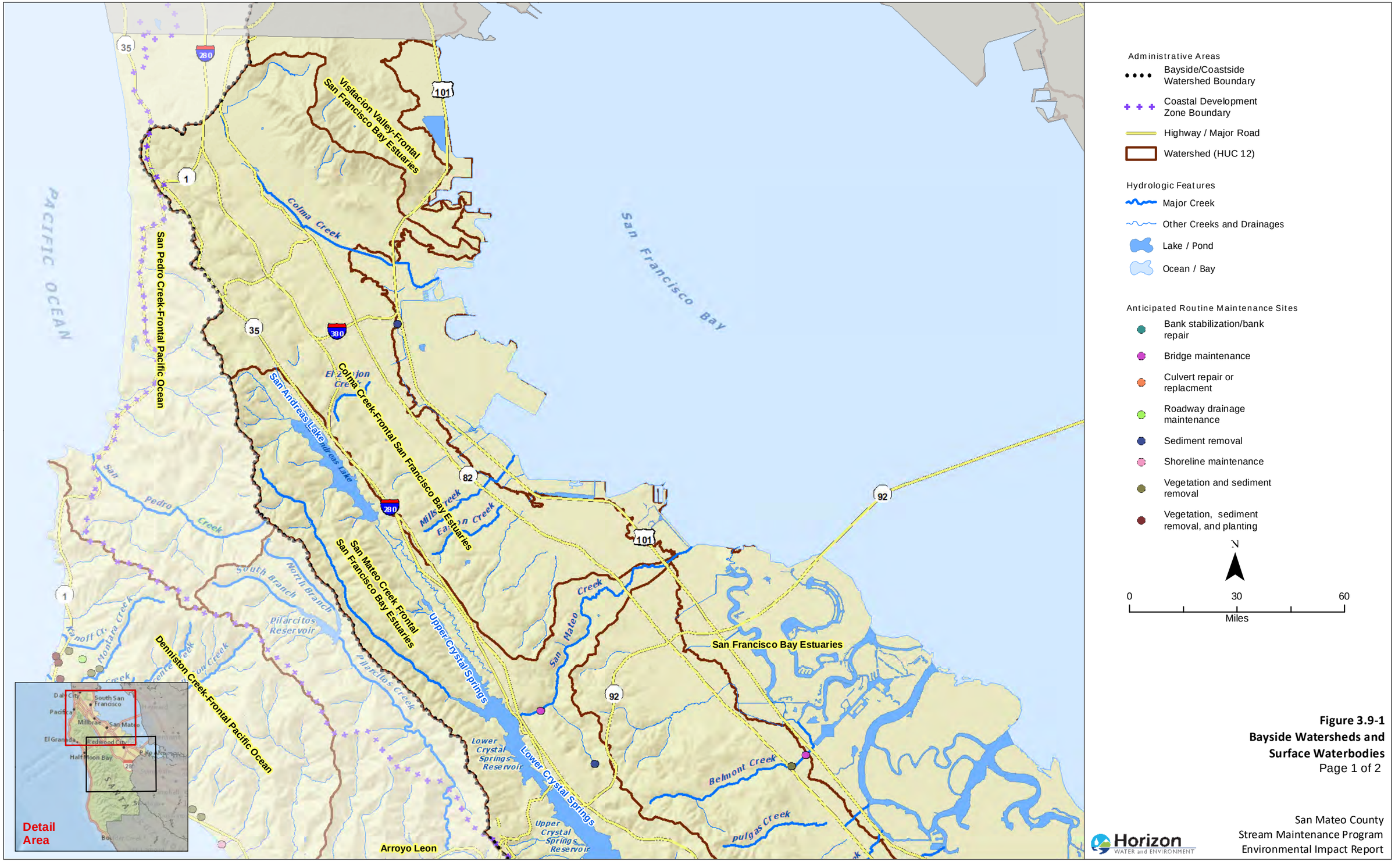

Figure 3.9-1
Bayside Watersheds and Surface Waterbodies
Page 1 of 2

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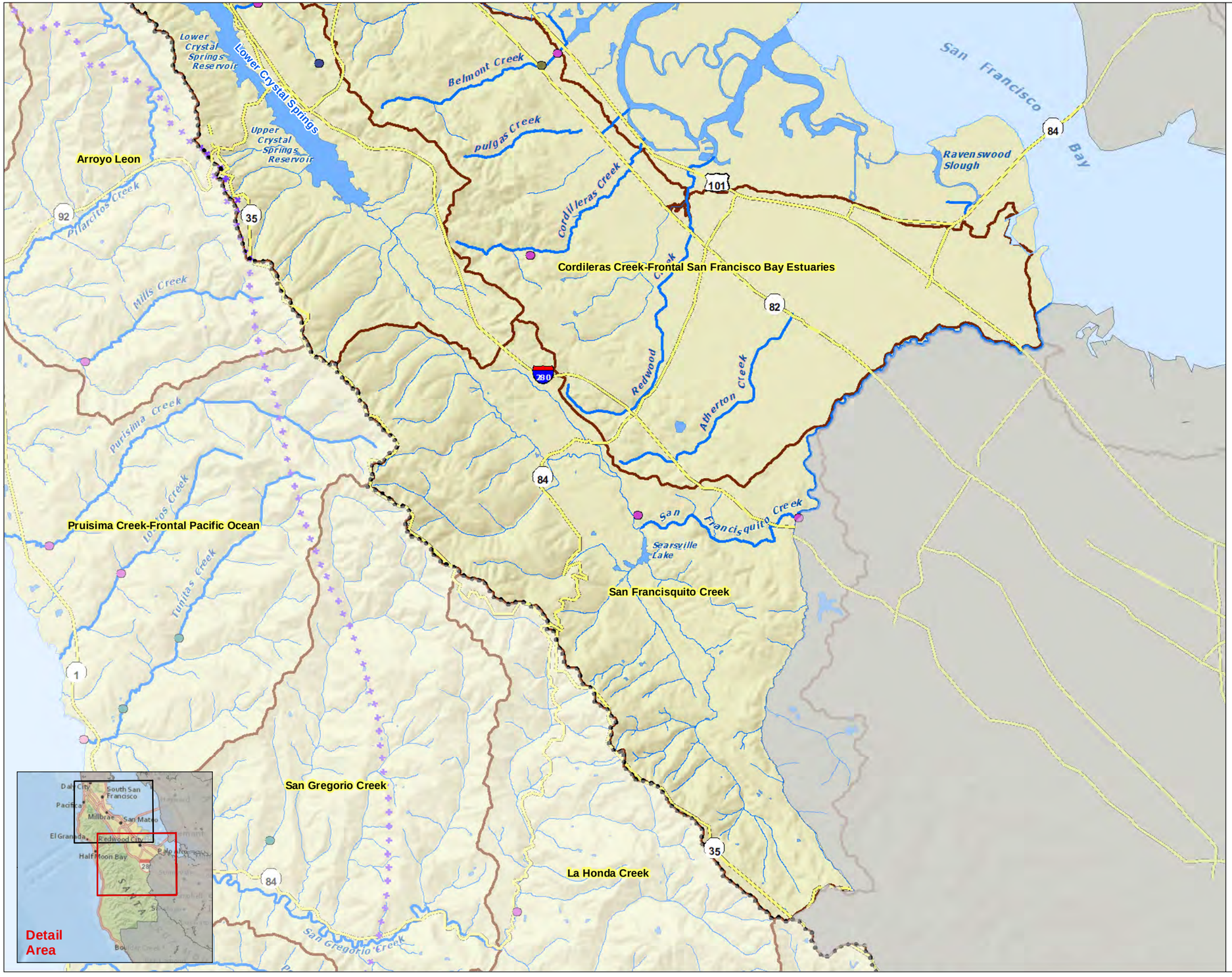

Figure 3.9-1
Bayside Watersheds and Surface Waterbodies
Page 2 of 2

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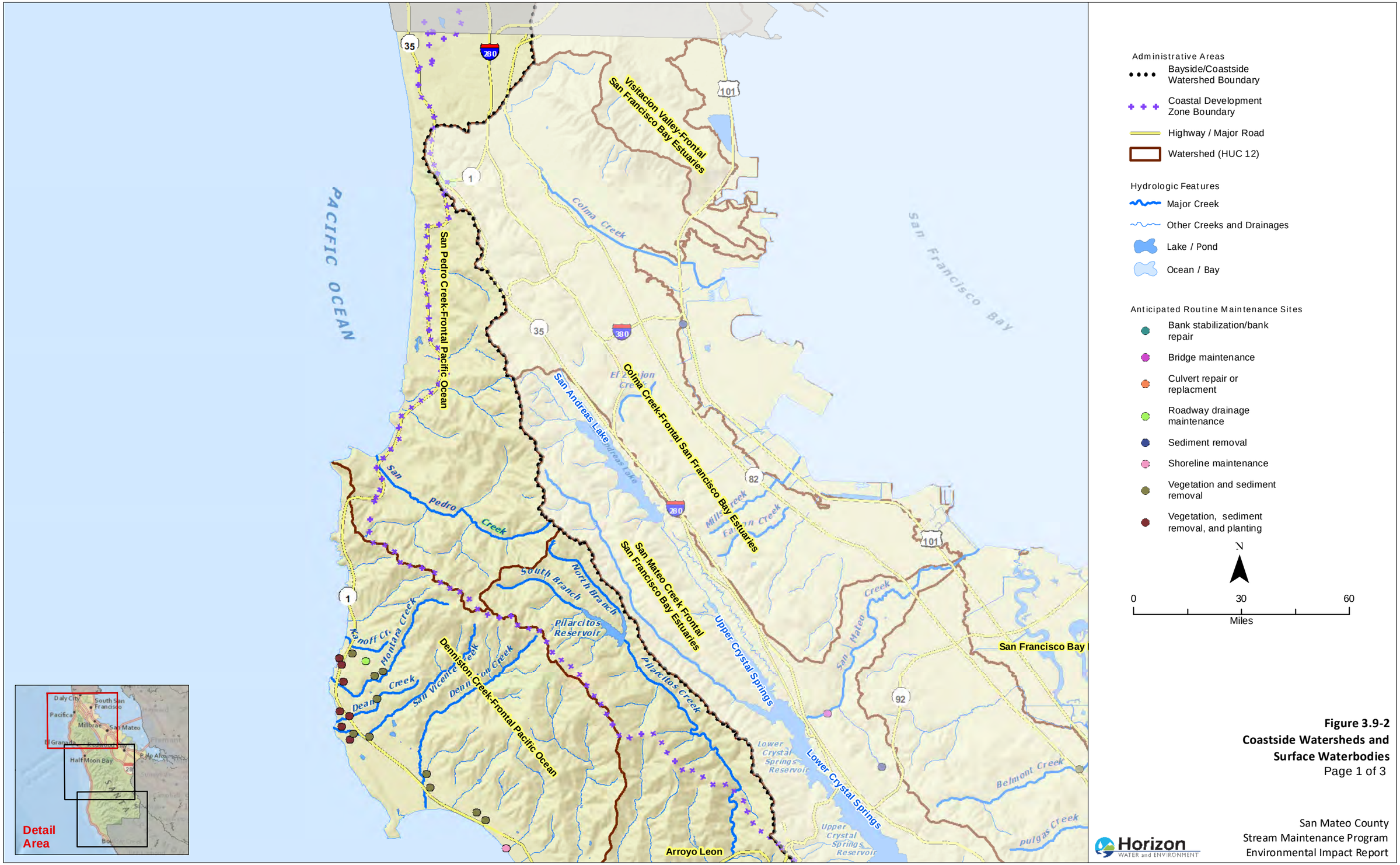

Figure 3.9-2
Coastside Watersheds and Surface Waterbodies
Page 1 of 3

San Mateo County
Stream Maintenance Program
Environmental Impact Report

Horizon WATER and ENVIRONMENT

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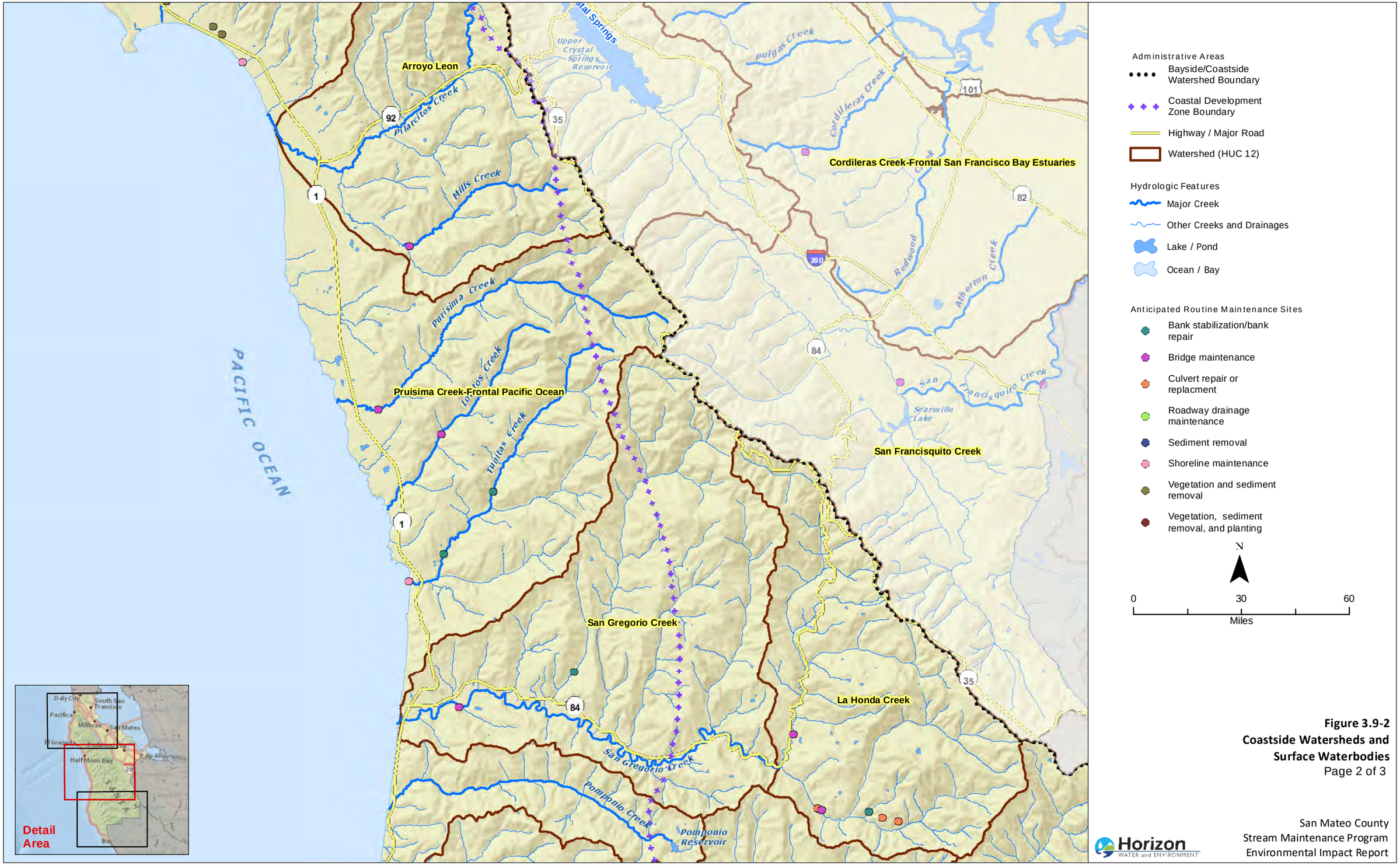

Figure 3.9-2
Coastside Watersheds and Surface Waterbodies
Page 2 of 3

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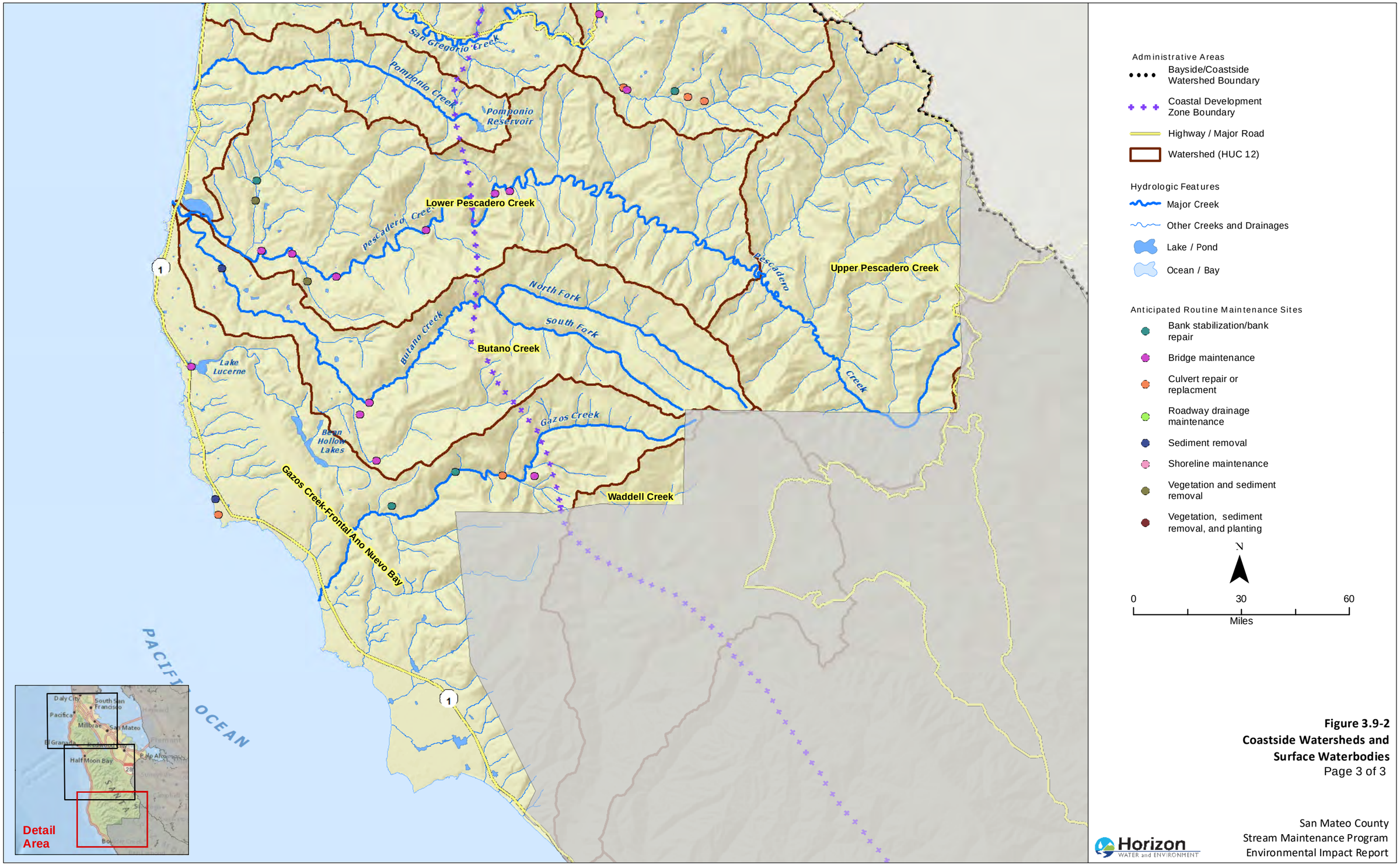

Figure 3.9-2
Coastside Watersheds and Surface Waterbodies
Page 3 of 3

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The Coastside region supports a system of relatively small creeks that drain the western hillslopes of the Santa Cruz Mountains. The largest of these creeks include Pilarcitos Creek, Purisima Creek, Lobitos Creek, Tunitas Creek, San Gregorio Creek, Pescadero Creek, Butano Creek, and Gazos Creek (see **Table 3.9-2**). In the southern portion of the Coastside region, several impoundments (e.g., Lake Lucerne and Bean Hollow Lakes) are located in the lower watershed areas, as well as Pescadero Marsh, a large brackish marsh at the mouth of Pescadero and Butano Creek.

The James V. Fitzgerald Area of Special Biological Significance (ASBS) State Water Quality Protection Area and Fitzgerald Marine Reserve are located along the coast of Moss Beach in this region. The State Water Resources Control Board (SWRCB) designates ASBS as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. The James Fitzgerald ASBS extends from 4th Street in Montara south to the Pillar Point breakwater. The Marine Reserve is within the boundary of the ASBS, a 5.5-mile band of shoreline, which was designated for protection by the SWRCB due to the diversity of habitat and marine life found within this coastline band.

Table 3.9-2. Major Watershed Areas and Surface Waters in the Coastside Region

Hydrologic Unit Code (HUC) Cataloging Units	Names of HUCs	Major Waterbodies within the HUC
180500060204	San Pedro Creek-Frontal Pacific Ocean	San Pedro Creek
180500060205	Denniston Creek – Frontal Pacific Ocean	Kanoff Creek; Montara Creek; Dean Creek; San Vicente Creek; Denniston Creek
180500060201	Arroyo Leon	Pilarcitos Creek; Pomponio Creek; Pilarcitos Reservoir
180500060206	Purisima Creek – Frontal Pacific Ocean	Purisima Creek; Lobitos Creek; Tunitas Creek
180500060203	San Gregorio Creek	San Gregorio Creek
180500060202	La Honda Creek	La Honda Creek; Alpine Creek
180500060101	Upper Pescadero Creek	Pescadero Creek
180500060103	Lower Pescadero Creek	Pescadero Creek; Pescadero Marsh
180500060102	Butano Creek	Butano Creek; Butano Marsh
180500060303	Gazos Creek – Frontal Año Nuevo Bay	Gazos Creek; Lake Lucerne; Bean Hollow Lakes

Precipitation Patterns

Precipitation patterns and mean annual rainfall vary significantly throughout the program area and are driven by local topography. The steep slopes and ridges of the Santa Cruz Mountains create orographic rainfall effects, with the western slopes and higher peaks receiving more precipitation. A rain shadow effect is also observed on the lee side of the mountains, with less rainfall as watershed elevations descend into the Bay plain. Average annual precipitation patterns in the program area may range from 22-29 inches of precipitation along the Pacific coast, 42-50 inches in the upper watershed areas, and 15-20

inches on the San Francisco Bay shoreline (Western Regional Climate Center 2018). In addition to influencing precipitation patterns, the mountain topography creates a physical divide between and directs runoff and surface flows to either the ocean coastline or Bay shoreline.

Flooding

Designated Flood Zones

The Federal Emergency Management Agency (FEMA) has identified Special Flood Hazard Areas as areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. Most 1-percent annual chance floods (or base floods) in San Mateo County are located in topographically low areas along the Bay margins, such as the western extent of Burlingame, San Mateo, Foster City, San Carlos, and Redwood City (FEMA 2011). Areas directly adjacent to creek channels are typically designated as Special Flood Hazard Areas.

Similar to the Bayside, the Coastside also has topographically low areas along the ocean which are identified as base flood zones, such as in Pacifica, Half Moon Bay, and Pescadero (FEMA 2011). In the middle and upper watershed areas, land adjacent to major creeks is also designated as base flood zone areas, including along Denniston, Mills, San Gregorio, Pescadero, Butano Creeks.

Due to the flood-prone nature of localized areas adjacent to streams, regular maintenance is required to ensure flood conveyance capacity particularly in winter months. Natural channels and modified earthen channels in the program area receive stormwater through culverts, swales, ditches and bridges. These conveyance structures must be maintained to avoid flooding to adjacent roadways. To ensure adequate stormwater conveyance through culverts, maintenance of these structures may involve sediment removal, vegetation management, culvert repair/replacement, erosion protection, bank stabilization, among other activities.

Dams

San Mateo County has 20 jurisdictional dams within the Santa Cruz mountains, their foothills, along the Bay margins, and on the coastal terrace (County of San Mateo 2005). Potential dam failure could result in inundation in various watersheds downstream of the dams. Inundation areas due to dam failure include downstream portions of Bear Gulch, Burlingame, Crocker, Crystal Springs, Laurel, and Pilarcitos Creeks. The proposed program does not involve dam maintenance.

Tsunami Areas

Areas along the Bayside and Coastside are located within the tsunami inundation zone. Locations most prone to the risks of tsunami include the communities of Pacifica, Montara, Half Moon Bay, San Gregorio, and Pescadero (California Emergency Management Agency [Cal EMA] 2009). Along the Bayside, areas prone to inundation are mostly limited to marshes sloughs along the Bay margins, including the Coyote Point Marina.

Groundwater Supplies, Quality, and Recharge

Various state-designated groundwater aquifers or basins are present within the program area (California Department of Water Resources [DWR] 2019). The County would not operate

groundwater recharge or pumping facilities under the proposed program. However, private residences and communities in the program area may operate groundwater wells for water supply. The proposed program would not involve withdrawal or recharge of groundwater.

Water Quality

Under the Clean Water Act (CWA) Section 303(d), states are required to identify "impaired water bodies" (those that do not meet established water quality standards), identify the pollutants causing the impairment, establish priority rankings for waters on the list, and develop a schedule for developing control plans to improve water quality. Impaired waterbodies in the program area identified on the CWA Section 303(d) list (SWRCB 2017) are shown in **Table 3.9-3**.

Table 3.9-3. Clean Water Act Section 303(d) List of Impaired Waterbodies in the Program Area

Waterbody	Pollutant	Total Maximum Daily Load (TMDL) Completed
Bayside (north to south)		
San Francisco Bay, Lower	Chlordane	Estimated (Est.) by 2013
	DDT (Dichlorodiphenyltri chloroethane)	Est. 2013
	Dieldrin	Est. 2013
	Dioxin compounds (including 2,3,7,8-Tetrachlorodibenzodioxin [TCDD])	Est. 2019
	Furan Compounds	Est. 2019
	Invasive Species	Est. 2019
	Mercury	Completed 2008
	PCBs (Polychlorinated biphenyls)	Completed 2010
	Trash	Addressed under National Pollutant Discharge Elimination System (NPDES) MS4 permit Est. 2021
Colma Creek	Trash	Addressed under NPDES MS4 permit
San Mateo Creek	Diazinon	Addressed under *Urban Creeks Pesticide Toxicity TMDL* (2007)
	Trash	Addressed under NPDES MS4 permit
San Mateo Creek, Lower	Sediment Toxicity	Est. 2029
Marina Lagoon	Indicator Bacteria	Addressed under *San Francisco Bay Beaches Bacteria TMDL* (2017)
San Francisquito Creek	Diazinon	Addressed under *Urban Creeks Pesticide Toxicity TMDL* (2007)
	Sedimentation/Siltation	In progress; Est. 2018

	Trash	Addressed under NPDES MS4 permit
Coastside (north to south)		
Pacific Ocean at Pacifica State/Linda Mar Beach	Indicator Bacteria	Completed 2013
San Pedro Creek	Indicator Bacteria	Completed 2013
Pilarcitos Lake	Mercury	Est. 2029
San Vicente Creek	Indicator Bacteria	Addressed under *Water Quality Improvement Plan* (2011) Est. 2019
Pacific Ocean at Pillar Point	Mercury	Est. 2019
Pacific Ocean at Pillar Point Beach	Indicator Bacteria	Est. 2019
Pacific Ocean at Venice Beach	Indicator Bacteria	Est. 2019
San Gregorio Creek	Indicator Bacteria	Est. 2019
	Sedimentation/Siltation	Est. 2013
Pomponio Creek	Indicator Bacteria	Est. 2019
Pescadero Creek	Sedimentation/Siltation	Completed 2019
Butano Creek	Sedimentation/Siltation	Completed 2019

Source: SWRCB 2017

3.9.2 REGULATORY SETTING

FEDERAL LAWS, REGULATIONS, AND POLICIES

Clean Water Act Section 404

Section 404 of the CWA prohibits the discharge of dredged and fill materials into waters of the United States, including wetlands, without prior U.S. Army Corps of Engineers (USACE) authorization. "Discharge of dredged material" and "discharge of fill material" are defined in Title 33, Section 323.2 of the Code of Federal Regulations (33 Code of Federal Regulations [CFR] Section 323.2). Waters of the United States, including wetlands, are defined in 33 CFR Section 328.3. USACE jurisdiction in wetlands and other waters of the United States is described in more detail in Section 3.4, *Biological Resources*.

USACE does not consider "incidental fallback," or small volumes of dredged material that become redeposited within waters of the United States during dredging or excavation activities, to be a discharge of dredged material. As a result, the incidental fallback associated with excavating sediment from a stream channel using long-reach excavators or similar equipment from a top-of-bank location or within the channel would not be regulated by USACE under CWA Section 404.

Other CWA sections are implemented by state agencies as described below.

Regional General Permit

Under the authority of Section 404 of the CWA and Section 10 of the Rivers and Harbors Act, USACE commonly issues a Regional General Permit (RGP) for routine maintenance activities, such as those involved in the proposed program, conducted over a watershed or San Mateo County area that are similar in nature and cause only minimal individual and cumulative environmental impacts. An RGP is typically valid for 5 years from the date of issuance and may be renewed at USACE's discretion.

State Laws, Regulations, and Policies

PORTER-COLOGNE WATER QUALITY CONTROL ACT

California's Porter-Cologne Act was enacted in 1969 and, together with the federal CWA, provides regulatory guidance to protect water quality and water resources. The Porter-Cologne Act established SWRCB and divided California into nine regions, each overseen by a Regional Water Quality Control Board (RWQCB). The Porter-Cologne Act established regulatory authority over waters of the state, which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the State." More specifically, SWRCB and its nine RWQCBs have jurisdiction over the bed and banks of a stream channel, its riparian corridor, and its beneficial uses. The San Francisco Bay RWQCB has jurisdictional authority to implement the Porter-Cologne Act in most of San Mateo County. The Central Coast RWQCB has jurisdiction of the southernmost portion of the Coastside region, including maintenance sites located along Pigeon Point Road and Gazos Creek. All waters of the United States in the program area also are considered waters of the state and are subject to RWQCB jurisdiction under the Porter-Cologne Act. The Porter-Cologne Act assigns responsibility for implementing CWA Sections 303, 401, and 402 to SWRCB and RWQCBs, as described further below.

The San Francisco Bay Water Quality Control Plan (2017) lists the following beneficial uses for waterbodies (or watersheds) in the Program area, as presented in **Table 3.9-4**. Similarly, the Central Coast Water Quality Control Plan (2017) lists beneficial uses for Gazos Creek, which are also shown in Table 3.9-4.

Table 3.9-4. Beneficial Uses in the San Mateo County Watersheds

Creek	AGR	MUN	FRSH	IND	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPAWN	WARM	WILD	REC-1	REC-2	NAV
Bayside (north to south)																	
Lower San Francisco Bay				E	E	E		E		E	E	E		E	E	E	E
Colma Creek													E	E	E	E	
Easton Creek													E	E	E	E	
San Mateo Creek			E				E			E	E	E	E	E	E	E	
Polhemus Creek							E						E	E	E	E	
Lower Crystal Springs Reservoir		E					E				E	E	E	E	E*	E	
Upper Crystal Springs Reservoir		E					E				E	E	E	E	E*	E	
San Andreas Creek			E				E						E	E	E	E	
Colma Creek													E	E	E	E	
Smith Slough								E			E			E	E	E	
Cordilleras Creek													E	E	E	E	
Redwood Creek													E	E	E	E	
Arroyo Ojo de Agua													E	E	E	E	
San Francisquito Creek							E			E		E	E	E	E	E	
Los Trancos Creek							E			E	E	E	E	E	E	E	
Bear Creek							E			E	E	E	E	E	E	E	
West Union Creek							E			E	E	E	E	E	E	E	
Searsville Lake	E						E					E	E	E	E	E	
Alambique Creek							E						E	E	E	E	
Sausal Creek							E						E	E	E	E	
Coastside (north to south)																	
Pacific Ocean (San Mateo, San Francisco Counties				E	E	E			E	E	E	E		E	E[1]	E	E
San Pedro Creek		E					E			E	E	E	E	E	E	E	
Denniston Creek	E	E					E			E	E	E	E	E	E	E	
San Vicente Creek	E	E					E			E	E	E	E	E	E	E	
Arroyo de en Medio							E						E	E	E	E	
Lobitos Creek	E						E			E	E	E		E	E	E	
Tunitas Creek	E	E					E			E	E	E	E	E	E	E	
San Gregorio Creek	E						E			E	E	E	E	E	E	E	
La Honda Creek							E			E	E	E	E	E	E	E	
Mindego Creek							E				E	E	E	E	E	E	
Alpine Creek							E			E	E	E	E	E	E	E	

Creek	AGR	MUN	FRSH	IND	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPAWN	WARM	WILD	REC-1	REC-2	NAV
Pomponio Creek	E						E			E	E	E	E	E	E	E	
Pescadero Creek	E	E					E			E	E	E	E	E	E	E	
Tarwater Creek							E			E	E	E	E	E	E	E	
Peters Creek							E				E	E	E	E	E	E	
Lambert Creek							E				E	E	E	E	E	E	
Slate Creek							E				E	E	E	E	E	E	
Butano Creek							E			E	E		E	E	E	E	
Gazos Creek	E	E	E		E		E			E		E	E	E	E	E	

Notes:

E = Existing Beneficial Use: Indicates an existing beneficial use actually attained in the surface or ground water.

AGR = agricultural supply ; MUN= municipal and domestic water supply; FRSH = freshwater replenishment; IND = industrial service supply; COMM = commercial and sport fishing; SHELL = shellfish harvesting; COLD = cold freshwater habitat; EST = estuarine habitat; MAR = marine habitat; MIGR = fish migration; RARE = preservation of rare and endangered species; SPAWN = fish spawning; WARM = warm freshwater habitat; WILD = wildlife habitat; REC-1 = water contact recreation; REC-2= noncontact water recreation; NAV = navigation.

[1]REC-1 applies within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. This distance is consistent with the applicability of water-contact standards in the Water Quality Plan for the Ocean Waters of California.

Source: San Francisco Bay RWQCB 2017; Central Coast RWQCB 2019.

The San Francisco Bay and Central Coast Basin Plans contain qualitative and quantitative water quality objectives for bacteria, dissolved oxygen, oil and grease, pH, salinity, sediment and suspended material, tastes and odors, temperature, and other criteria to protect beneficial uses. The following key water quality objectives established in the Basin Plans apply to the proposed program. Where multiple water quality objectives existed, the most conservative metric was selected.

- Dissolved oxygen in non-tidal waters: coldwater habitat – 7.0 milligrams per liter (mg/L); warmwater habitat – 5.0 mg/L
- Temperature: The temperature of any cold or warm freshwater habitat shall not be increased by more than 5 degrees Fahrenheit (°F) (2.8 degrees Celsius [°C]) above the natural receiving water temperature
- Turbidity: Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 Nephelometric Turbidity Units (NTU)
- pH: The pH shall not be depressed below 6.5 or raised above 8.5, which encompasses the pH range usually found in waters within the basin; controllable water quality factors shall not cause changes greater than 0.5 unit in normal ambient pH levels

Clean Water Act

Section 303 and Total Maximum Daily Load Program

Under Section 303 of the CWA, the RWQCBs, in conjunction with USEPA, are responsible for:

- identifying "impaired water bodies" (those that do not meet established water quality standards);
- identifying the pollutants causing impairment;
- establishing priority rankings for waters on the list; and
- developing and implement pollution control plans, also called Total Maximum Daily Loads (TMDLs), to improve water quality.

The Section 303(d) list is updated every 3 years.

The San Francisco Bay RWQCB has prepared, or is in the process of preparing, TMDLs for water quality impairments identified on the Section 303(d) list. The TMDLs listed in Table 3.9-3 have been established for the San Francisco Bay and/or its tributaries within the program area.

Section 401

All projects that have a federal component and may affect water quality in the state (including projects that require federal agency approval, such as issuance of a CWA Section 404 permit) also must comply with CWA Section 401. The purpose of Section 401 is to evaluate water quality when considering activities associated with dredging or placement of fill materials into waters of the United States. Section 401compliance involves obtaining a CWA Section 401 Water Quality Certification to confirm that any such discharge will comply with the applicable provisions of the CWA, including state water quality standards. Section 401 Water Quality Certifications are issued by the RWQCBs. For the proposed program, the County would apply for Section 401 Water Quality Certifications from the San Francisco Bay RWQCB and Central Coast RWQCB.

Section 402

As authorized under CWA Section 402, the RWQCBs regulate point-source and non-point-source discharges into surface waters (other than dredged or fill material) through the NPDES permit program. Applicants can acquire either general permits (those that cover a number of similar or related activities) or individual permits for discharges to waters of the United States. Examples of activities covered under the NPDES permit program include general construction activities, aquatic weed pesticide applications, and stormwater drainage. Permits are valid for a 5-year period. As discussed in Section 3.8, *Hazards and Hazardous Materials,* under "Regulatory Setting," all aquatic pesticides applied by the County are done so in accordance with requirements of the NPDES permit (Water Quality Order No. 2013-0002-DWQ, General Permit No. CAG990005) for the regulation of residual aquatic pesticides to control aquatic weeds in waters of the United States (SWRCB 2013).

CWA Section 402(p) requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including construction activities), and designated stormwater discharges, which are

considered significant contributors of pollutants to waters of the U.S. The County is subject to requirements in the Municipal Regional Stormwater NPDES Permit for Phase I municipalities and agencies in the San Francisco Bay Area (Order R2-2015-0049), also referred to as the Municipal Regional Permit (MRP). Each year, the County is required to submit an annual report to show compliance with requirements set forth in the Order.

License for Diversion and Water Use

Under California Water Code, Division 2, Section 5101, SWRCB requires each person or organization that uses diverted surface water or pumped groundwater from a known subterranean stream after December 31, 1965, to file a Statement of Water Diversion and Use. This documentation is commonly referred to as a "water right."

San Francisco Bay Conservation and Development Commission's San Francisco Bay Plan

The McAteer-Petris Act of 1965 established the San Francisco Bay Conservation and Development Commission (BCDC) to protect, enhance, and ensure responsible use of San Francisco Bay and the adjacent shoreline band. Under the McAteer-Petris Act, the San Francisco Bay Plan, and other plans for specific areas around the Bay, BCDC has regulatory responsibility over development in San Francisco Bay and shoreline margins within its jurisdiction. In more recent years, BCDC has adopted policies to require projects to be resilient to rising sea level based on a project's expected life.

Local Laws, Regulations, and Policies

Below is a description of the County's recently adopted sea level rise policy. Other applicable local plans and policies pertaining to hydrology and water quality are presented in Appendix C.

County of San Mateo Sea Level Rise Policy

On December 10, 2019, the County's Board of Supervisors adopted a policy requiring that all County-owned and operated assets, design and construction projects, leases, and property acquisitions take into account sea level rise. The intent of the policy is to understand the vulnerability of County-owned property and assets over their life cycle; develop an incremental approach to adaptation based on the current and future sea level rise risk; and coordinate with other communities on developing regional solutions. Under this new policy, all new County-funded facility projects need to be sited, designed, constructed, and adaptively managed to minimize sea level rise risks over the life of the project.

3.9.3 IMPACT ANALYSIS

Methodology

Potential short-term and long-term impacts to hydrology and water quality were assessed qualitatively, based on the degree to which the proposed program activities could result in violations of water quality standards, impairment of beneficial uses, or water quality conditions that could be harmful to aquatic life or human health. Each of these potential impacts is discussed below. Potential temporary and permanent impacts from proposed program activities were evaluated based on the beneficial uses established by the San Francisco Bay and Central Coasts RWQCBs, as shown in Table 3.9-4.

Criteria for Determining Significance

Based on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines and the County's environmental checklist, the proposed program would result in a significant impact on hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- Substantially decrease groundwater supplies or interfere with groundwater recharge such that the program may impede sustainable groundwater management of the basin and/or there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- Substantially alter the existing drainage pattern of the site or area (including through the alteration of the course of a stream or river or through the addition of impervious surfaces) in a manner which would:
  - Result in substantial erosion or siltation;
  - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding;
  - Create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
  - Impede or redirect flood flows
- Risk release of pollutants due to project inundation should the project be located in a flood hazard, tsunami, or seiche zone(s); or
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Implementation of the proposed program would not utilize groundwater supplies or involve any action that would change the volume or elevation of groundwater aquifers in the proposed program area. There would be no impact on groundwater supply. Therefore, criteria involving potential impacts to groundwater do not apply to the proposed program.

Environmental Impacts

Impact HYD-1: Violate Water Quality Standards or Waste Discharge Requirements or Otherwise Substantially Degrade Water Quality (*Less than Significant*)

The following subsections describe the ways in which conducting proposed maintenance activities could temporarily degrade water quality including: ground disturbance, disturbance of existing contaminated sediment, accidental release of hazardous materials, in-channel activities, vegetation management, and use of herbicides. In the long-term, once proposed maintenance activities are complete at a given site, water quality conditions would generally be improved in comparison to existing conditions. In many cases, addressing the County's maintenance sites (particularly slip-outs, bank stabilization sites, and repair/replacement of failed culverts) would have long term water quality benefits as the

program would stabilize eroded creek banks and slopes and thereby reduce sediment loads into creeks and other waterways.

Ground-disturbing Activities

Ground-disturbing activities including sediment removal, culvert repair and replacement, channel maintenance, bridge and roadside and swale maintenance, roadway slip-out and slide repair, bank stabilization, and roadway and trail repair could result in erosion and the movement of sediment to surface waters downstream from work areas. The movement and transport of soil, sediment and other loose material associated with these activities could also emit dust which could affect surface waters in the vicinity of work areas. Other related water quality impacts include increased turbidity and water temperature, and reduced dissolved oxygen levels in the water column. These ground-disturbing activities have the potential to degrade water quality or violate waste discharge requirements established by the San Francisco Bay and Central Coast RWQCBs. As described in Chapter 2, Section 2.7.2, the proposed program has established size and length limits of ground-disturbing activities. These self-imposed limits along with best management practices (BMPs), which are summarized below, would minimize erosion and sediment transport during and after proposed program activities.

Ground-disturbing maintenance activities in jurisdictional waterways, such as vegetation management or culvert repair or replacement, would occur during the dry season when work sites are dry or water levels are at their lowest and present little risk for sediment erosion and transport. As described in Chapter 2, culvert repair/replacement activities would be limited to 150 feet per site and 1,500 feet annually (for all sites).

Sediment removal activities from channels and beneath bridges typically occur at focused localized sites that experience sediment deposition or blockages. For the proposed program, sediment removal activities at creek and road crossings are limited to localized sites that are 150 feet in length or less. Sediment removal in channels would be limited to 500 feet per site and estimated volumes would range between 100 and 500 cubic yards per site. The proposed program includes an annual limit of 1,500 linear feet total for all sediment removal activities. If mechanized sediment removal is necessary at crossings or within a channel, an excavator or backhoe may be used from the top of bank or road which would minimize disturbance to surface waters. A vacuum truck may be used to extract sediment that has accumulated beneath bridges or within culverts, and silt fencing, or wattles would be placed across the culvert outlet or at the downstream end of a bridge to contain or filter out any sediment-laden water from unnecessarily entering the vacuum truck.

Creek bank stabilization activities involve the repair and stabilization of eroded or eroding banks and would take place on an as-needed basis. To the extent feasible, equipment is operated from top of bank and work is completed during the dry, summer months between June and October when creek flows are low or absent. In an average hydrologic year (based on average seasonal precipitation), individual creek bank stabilization or slip-out projects would not exceed 250 feet in length and the cumulative total annual work distance would not exceed 750 feet (for all sites).

Bridge maintenance activities may involve erosion protection improvements at the base of bridge abutments, removing and reapplying paint, repairing guard rails and decking, sealing joints, patching cracks, clearing debris, and other general surface and deck treatments. Such

activities would be limited to 25 feet upstream and 25 feet downstream of bridge and the 500 linear feet annually for all sites.

In addition to the above-described work length and size limits, the County would implement a number of BMPs that would minimize temporary erosion-related impacts to water quality. The County would implement several BMPs including but not limited to BMPs GEN-2 (Minimize the Area of Disturbance and Site Maintenance), GEN-3 (Construction Entrances and Perimeter), GEN-16 (Timing of Work), GEN-22 (Site Stabilization), EC-1 through EC-14, and SC-1 through SC-6 to minimize the area of ground-disturbing activities, to limit ground disturbing activities to the dry season, and require implementation of appropriate erosion and sediment control measures. The County would also implement BMP GEN-19 (Dust Management Controls) to minimize dust generated from ground-disturbing activities and thereby reduce potential temporary effects on surface waters in the vicinity of maintenance areas.

Applicable Best Management Practices

The County would implement the following BMPs to minimize potential temporary impacts to water or water quality due to ground-disturbing activities:

- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-8: Waste Management
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-16: Timing of Work
- BMP GEN-19: Dust Management Controls
- BMP GEN-22: Site Stabilization
- BMP EC-1: Brush Layering
- BMP EC-2: Brush Packing
- BMP EC-3: Live Staking
- BMP EC-4: Live Pole Drain
- BMP EC-5: Wattles/Fascines
- BMP EC-6: Hand Seeding
- BMP EC-8: Mulching
- BMP EC-9: Vegetative Buffer
- BMP EC-10: Erosion Control Blankets and Mats
- BMP EC-11: Surface Roughing
- BMP EC-12: Rolling Dip
- BMP EC-13: Slope or Bank Stabilization
- BMP EC-14: Energy Dissipator
- BMP SC-1: Sandbags and Gravel Bags
- BMP SC-2: Silt Fence
- BMP SC-3: Straw Log, Straw Roll, Coir Log
- BMP SC-4: Inlet Protection
- BMP SC-5: Stormwater Separation Systems
- BMP SC-6: Diversion Berm

Disturbance of Existing Contaminated Sediment (Sediment Handling and Disposal)

Sediment removal would primarily occur along engineered channels, creek crossings, and ditches along roadways and in County parks, where land uses involving hazardous materials storage or disposal are rare. Known hazardous materials clean-up sites and proper handling

of contaminated soil, sediment and groundwater are discussed further in Section 4.8, *Hazards and Hazardous Materials*. If sediment removal activities were to encounter contaminated soil, sediment, or groundwater, this could potentially degrade water quality if adequate precautions are not taken. If sediment planned for removal is considered hazardous, it would be disposed at a hazardous waste facility. If sediment is not considered hazardous and would not be reused at another County facility, it may be reused for agricultural or commercial purposes, or disposed of at an appropriate facility.

Implementation of the BMPs described below would minimize water quality effects that could occur due to disturbance of potentially contaminated sediment. These measures include but are not limited to establishing berms and covering stockpiles of sand or dirt with tarps, installing silt fences to slow or stop water and allow settling of soil particles, and placement of straw rolls/logs for temporary soil stockpile protection. BMP ST-1 (Testing and Disposal of Sediment) would prevent mobilization of sediment during and after sediment removal activities and would require proper testing and appropriate disposal of sediment if hazardous levels of contaminants are present.

Applicable Best Management Practices

The County would implement the following BMPs to minimize temporary impacts from disturbance of potentially contaminated sediment.

- BMP GEN-1: Staging and Access
- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-22: Site Stabilization
- BMP EC-9: Vegetative Buffer
- BMP SC-1: Sandbags and Gravel bags
- BMP SC-2: Silt Fence
- BMP SC-3: Straw Log, Straw Roll, and Coir Log,
- BMP SC-4: Inlet Protection
- BMP SC-5: Stormwater Separation Systems
- BMP SC-6: Diversion Berm
- BMP DW-1: Channel Dewatering
- BMP ST-1: Testing and Disposal of Sediment

Additionally, while not necessary to reduce this effect to less than significant, Mitigation Measures HAZ-1 and HAZ-2 would further minimize potential water quality impacts in the unlikely event that contaminated soil, sediment or groundwater are encountered during ground disturbing activities. These mitigation measures are described in Section 4.8.

Accidental Release of Hazardous Materials

Most of the proposed program's vegetation management and swale maintenance activities would be conducted by hand or with small gas-powered tools such as weed whackers, chainsaws, and vacuums. Proposed sediment removal, road repair, and culvert replacement/repair activities, however, could require the use of heavy machinery, typically from the top of channel banks or, if unavoidable, within the stream channel. Fuel and lubricants such as oil and grease are used in excavation and transportation equipment and vehicles. During sediment removal activities, equipment and worker vehicles would be stored and refueled at designated staging areas on access roads adjacent to the stream channel. Maintenance of bridges and other instream facilities may require repainting or

concrete repair using concrete, mortar, or grout. If hazardous materials (e.g., fuels, oils) were accidentally released directly or indirectly into the stream channel, the sediment and water in and around the work site could be significantly degraded. Fine sediments contained within stream channels are particularly apt at absorbing pollutants such as petroleum products. Water in the channels can transport pollutants downstream and carry them through the soil into underlying groundwater, thus affecting a larger area. Accidental release of maintenance-related hazardous materials would potentially result in a significant impact on water quality. Implementation of various BMPs would minimize the potential for accidental releases of hazardous materials into stream channels by requiring appropriate material and equipment staging, maintenance, and refueling areas, onsite hazardous materials management, spill prevention and response, and work site housekeeping.

Applicable Best Management Practices

The County would implement the following BMPs to avoid and minimize impacts due to accidental release of hazardous materials. A description of these BMPs is provided in Table 2-3 in *Chapter 2*.

- BMP GEN-6: Hazardous Materials Storage/Disposal
- BMP GGEN-7: Spill Prevention and Control
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling
- BMP GEN-11: Paving and Asphalt Work
- BMP GEN-12: Concrete, Grout, and Mortar Application
- BMP GEN-13: Exclude Concrete from Channel
- BMP GEN-14: Concrete Washout Facilities
- BMP GEN-15: Painting and Paint Removing
- BMP GEN-17: Timing of Work

In-Channel Activities

Maintenance work within the channel associated with bridge maintenance, bank stabilization, sediment removal, and other channel maintenance activities could result in short-term water quality impacts through the disturbance of streambed and banks, which may result in increased turbidity in the water column and migration of sediment to areas downstream. Work would generally occur under dry channel conditions (June 1 through October 31), as specified in BMP GEN-16 (Timing of Work). However, if maintenance is necessary where water is in the channel, dewatering would be conducted through the use of cofferdams and a clean water bypass. Implementation of BMP DW-1 (Channel Dewatering) would minimize temporary impacts on water quality by reducing sediment pollution from maintenance work areas during dewatering activities. In addition, implementation of BMPs GEN-3 (Construction Entrances and Perimeter), GEN-10 (Equipment Maintenance and Fueling), and GEN-13 (Exclude Concrete from Channel) would minimize temporary impacts on water quality associated with maintenance equipment and concrete used for channel and bridge maintenance and repair.

As noted above, once maintenance is complete at slip-outs, bank stabilization sites and failed culverts, water quality conditions would generally improve as proposed activities would repair erosion along banks, slopes, and roads near creeks and other water ways.

Applicable Best Management Practices

The County would implement the following BMPs to avoid and minimize water quality effects due to in-channel maintenance activities including dewatering. A description of these BMPs is provided in Table 2-3 in *Chapter 2*.

- GEN-3: Construction Entrances and Perimeter
- GEN-10: Equipment Maintenance and Fueling
- GEN-13: Exclude Concrete from Channel
- GEN-16: Timing of Work
- DW-1: Channel Dewatering

Vegetation Management Effects on Water Temperature

Proposed vegetation management activities would include mowing, trimming and pruning, tree removal, herbicide application, grazing, and fallen tree removal. These activities would primarily be conducted along County roads and trails, and other recreational areas. Vegetation removal along County flood control facilities would be limited (i.e., removing fallen trees at culvert inlets/outfalls or removing overgrown vegetation along channels and within ditches) and would not involve significantly thinning the riparian corridor. The primary purpose of vegetation management activities within water bodies is to protect infrastructure and maintain the designed hydraulic capacity of flood control facilities; therefore, it is unlikely that maintenance activities would remove the canopy over stream channels to such an extent that water temperatures would increase and exceed Basin Plan water quality objectives (e.g., increase of 5ºF above background conditions).

As a result, vegetation management activities would not permanently affect water quality and thus would not cause water temperatures to increase and exceed water quality objectives. Additionally, thinning of vegetation and removal of dead branches may even result in a beneficial effect to water temperatures in the long-term by maintaining or increasing canopy cover over stream channels. Where site conditions allow, the County would consider implementing the following biotechnical solutions at bank stabilization and roadway slip-out/slide repairs: BMP EC-1 (Brush Layering), EC-2 (Brush Packing), EC-3 (Live Staking), EC-4 (Live Pole Drain), EC-5 (Wattles/Fascines). Implementing such biotechnical solutions would help increase canopy cover over stream channels and thereby reduce water quality effects related to increased water temperature. In addition, implementation of BMP GEN-4 (Salvage/Reuse of Plant and Woody Material) may also help increase canopy cover at maintenance sites and thereby reduce changes in water temperatures.

Applicable Best Management Practices

The County would implement the following BMP to protect against potential impacts on water quality from the use of herbicides in the proposed program area.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-4: Salvage/Reuse of Woody Material
- BMP GEN-22: Site Stabilization
- BMP EC-1: Brush Layering
- BMP EC-2: Brush Packing
- BMP EC-3: Live Staking
- BMP EC-4: Live Pole Drain
- BMP EC-5: Wattles/Fascines
- BMP EC-9: Vegetative Buffer

Use of Herbicides

As part of the proposed program's vegetation management activities, herbicides would be applied in certain areas of the program area. Herbicide application would not constitute a significant increase in usage compared to baseline conditions. Herbicides would be used in compliance with the County's Integrated Pest Management (IPM) Policy (Resolution No. 070851), which emphasizes applying non-pesticide alternatives on County owned or managed land where feasible and, applying the least toxic pesticides to the maximum extent practicable. A combination of chemical and mechanical methods would be used to manage vegetation along trails, roads, and on County lands. Roadside broadcast spraying is not allowed within the County. Targeted spot spraying would be the primary method of herbicide application along County roads and within County Parks.

Near water bodies, herbicide use would be limited to controlling excessive growth of non-native plants and in accordance with the buffers specified on product labels . Herbicide application would only be conducted when the climate is dry and when wind speeds do not exceed 7 miles per hour. Nonetheless, accidental release of herbicides or transport of applied herbicides, in stormwater runoff, to local surface waters would pose a significant water quality impact. Implementation of BMP-7 (Spill Prevent and Control), BMP GEN-6 (Hazardous Materials Storage/Disposal), and BMP BIO-3 (California Red-Legged Frog Protection Measures) would protect against potential impacts on water quality from the accidental spill of herbicides; require pesticides to be labeled, stored, and applied properly in accordance with manufacturer's requirements; and require compliance with all USEPA-mandated herbicide requirements pertaining to California red-legged frogs.

Applicable Best Management Practices

The County would implement the following BMPs to protect against potential impacts on water quality from the use of herbicides in the proposed program Area.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-6: Hazardous Material Storage/Disposal
- BMP GEN-7: Spill Prevention and Control
- BMP BIO-3: California Red-legged Frog Protection Measures
- BMP BIO-12: Measures to Protect Special-Status Butterflies

Conclusion

Implementation of the BMPs mentioned above and detailed in Chapter 2, *Project Description*, would minimize the potential for proposed maintenance activities to substantially degrade

water quality or violate water quality standards or waste discharge requirements. In addition, proposed maintenance activities such as bank stabilization and sediment removal would provide long-term water quality benefits by reducing existing erosion and ensuring adequate flood conveyance within County maintained creeks and channels. Therefore, this impact would be **less than significant**.

Impact HYD-2: Substantially Alter Existing Drainage Pattern of Site or Area, or Create or Contribute Runoff Water That Exceeds Capacity of Stormwater Systems or Results in Substantial Erosion (*Less than Significant*)

The proposed program would involve sediment removal to restore channel or culvert conveyance capacity, culvert repair and replacement, bridge maintenance, concrete channel repair and other minor activities at storm drainage facilities that could affect existing drainage patterns in the proposed program area's stream channels and drainages. It is important to note that the proposed program would not substantially alter existing drainage patterns as the primary objectives of the program are to maintain the functional integrity and operation of existing County facilities including culverts and other stormwater facilities, roads, trails, bridges, and other recreational facilities owned by the County. Without conducting needed maintenance, areas subject to active erosion or sediment accumulation would continue to be subject to such conditions. Over time, erosion and sediment accumulation could increase at such sites, further degrading site conditions such that bank failures or flooding may occur and undermine the structural integrity and functionality of County channels, stormwater facilities, roads, trails, and other facilities. Additionally, by not conducting maintenance, erosive forces could redirect runoff such that new drainage pathways could be created and cause further damage to such facilities and decrease water quality.

The proposed routine maintenance activities including sediment removal at road crossings and channels, bank stabilization and road slip-out/slide repairs, roadside ditch and green infrastructure (GI) maintenance, storm drainage and other road and trail maintenance activities, would help prevent runoff flows from causing erosion, siltation, and flooding. Maintenance activities would help ensure that runoff gets directed adequately to culverts, roadside ditches, GI facilities, and drainages and help protect water quality and beneficial uses. In some culvert failure locations, where culverts were inadequately sized or designed, the County would seek to properly size the replacement culvert to reduce future culvert failures, reduce existing erosion at the repair site, and thus improve water quality and meet TMDL requirements. Where feasible, the County would replace culverts with new ones that are designed and constructed to accommodate the 100-year flow. In addition, the County would follow stormwater management BMPs (listed below) and County guidelines for road maintenance. The proposed program would have long-term environmental benefits by minimizing erosion, siltation, and flooding at County facilities and would therefore not substantially alter existing drainage patterns or create or contribute runoff water that exceeds the capacity of existing stormwater systems.

Applicable Best Management Practices

The County would implement the following BMPs to minimize impacts related to existing drainage patterns, increased runoff, and erosion.

- BMP GEN-1: Staging and Access

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-3: Construction Entrances and Perimeter
- BMP GEN-5: Non-Hazardous Materials
- BMP GEN-22: Site Stabilization
- BMP EC-1: Brush Layering
- BMP EC-2: Brush Packing
- BMP EC-3: Live Staking
- BMP EC-4: Live Pole Drain
- BMP EC-5: Wattles/Fascines
- BMP EC-6: Hand Seeding
- BMP EC-8: Mulching
- BMP EC-9: Vegetative Buffer
- BMP EC-10: Erosion Control Blankets and Mats
- BMP EC-11: Surface Roughing
- BMP EC-12: Rolling Dip
- BMP EC-13: Slope or Bank Stabilization
- BMP EC-14: Energy Dissipator
- BMP SC-1: Sandbags and Gravel Bags
- BMP SC-2: Silt Fence
- BMP SC-3: Straw Log, Straw Roll, Coir Log
- BMP SC-4: Inlet Protection
- BMP BIO-19: Restore Channel Features

Conclusion

With implementation of the above-listed BMPs, the proposed program would improve conveyance capacity of stormwater systems and reduce erosion. Impacts to existing drainage patterns, stormwater capacity and erosion would therefore be **less than significant**.

Impact HYD-3: Harm to People or Structures due to Flooding as a Result of Dam Failure or Inundation by Seiche, Tsunami, or Mudflow (*Less than Significant*)

Several proposed maintenance activities would occur within the designated 100-year flood zone of many creeks and channels. However, proposed program activities would not reduce flood or conveyance capacity within the channels maintained. On the contrary, maintenance activities such as sediment removal, bank stabilization, bridge maintenance, and culvert repair and replacement, would restore instream infrastructure and culverts to their design capacity. Proposed program activities would reduce the potential for flooding and therefore be considered a beneficial impact.

Tsunamis are ocean waves formed by large underwater displacements from major earthquake fault ruptures or underwater landslides. Proposed program activities would occur near and within tsunami inundation zones along the Pacific Ocean and San Francisco Bay, such as El Granada on the Coastside and the Coyote Point Marina on the Bayside. However, the proposed program would not build new structures or encourage people to spend more time in tsunami inundation zones. Therefore, no additional harm to people or structures from tsunamis would occur due to the proposed program.

The program area has steep slopes and mountainous topography in some locations that present an existing mudflow risk to local residents and maintenance workers. Most proposed program activities would occur in the dry season and would be temporary in nature. Road maintenance and repairs would be conducted to County standards, which include preventing mudflows and mudslides. In the long term, proposed program activities, particularly road

slip-out and slide repairs and culvert repairs, would minimize the potential risk of mudflows in the program area.

The proposed program would take place in some areas with dams upstream of the maintenance areas. No dam maintenance activities would be conducted under the proposed program. As such, the proposed program would not change current conditions in relation to dams upstream of maintenance areas.

Seiches are earthquake-induced waves in a confined body of water such as a lake, reservoir, or bay. Seiches could occur in reservoirs upstream of various maintenance sites. The proposed program would not involve maintenance at these reservoirs; therefore no change from current conditions would occur in regards to exposure of people or structures to seiches.

Conclusion

Overall, the proposed program would improve existing conditions as they relate to flood conveyance and tsunami and mudslide risk. The proposed program would not alter current levels of risk associated with seiches or upstream dams. The proposed program's impact to flooding as a result of dam failure, inundation by tsunami, mudflow and seiches would be therefore be **less than significant**.

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3.10 LAND USE AND PLANNING

This chapter describes the setting and evaluates the County of San Mateo Routine Maintenance Program's (proposed program's) effects related to land use and planning. This section discusses the pertinent local plans and policies related to the program.

3.10.1 ENVIRONMENTAL SETTING

As described in Chapter 2, *Project Description,* the program area generally consists of two physiographic regions which are divided by the Santa Cruz Mountains. The Bayside of the program area (San Mateo County areas draining to the San Francisco Bay) is highly urbanized whereas the Coastside (San Mateo County areas draining to the Pacific Ocean) is largely undeveloped and comprised of a combination of mountainous areas, coastal beaches, and rural land uses. As San Mateo County is a large area, for the purposes of this discussion, the region's land use is further subdivided into five smaller geographic areas as follows: (1) North Bayside; (2) South Bayside; (3) North Coastside; (4) Central Coastside; and (5) South Coastside. These geographic areas are shown in Figures 2-2 through 2-6.

North Bayside

The North Bayside region extends from the San Francisco County line down to San Mateo Creek/Laurel Creek watershed boundary in the city of San Mateo, and includes the area east of Daly City to the San Francisco Bay. The northern and eastern portions of this region consist of rolling foothills and the bay plain. This region is largely developed consisting of urban land uses (i.e., commercial, residential, industrial, etc.) and includes the cities of South San Francisco, San Bruno, Millbrae, Burlingame, Hillsborough, and San Mateo (see **Figure 3.10-1**, Sheet 1). Due to urbanization, most historic waterways have been significantly modified or culverted in this area. The area west of I-280 is largely undeveloped consisting of open space uses including watershed lands owned and managed by the City and County of San Francisco.

South Bayside

The South Bayside region encompasses the southeastern portion of San Mateo County, extending from the area south of the San Mateo Creek/Laurel Creek watershed boundary in the city of San Mateo (roughly near State Route [SR] 92) to the Santa Clara County boundary, and east of Skyline Boulevard (SR 35) to the San Francisco Bay. Similar to the North Bayside region, the eastern portion of this region adjacent to the San Francisco Bay is highly developed with urban land uses (i.e., commercial, residential, industrial, etc.) and includes the cities of San Mateo, Foster City, Redwood City, Belmont, San Carlos, Menlo Park, Atherton, East Palo Alto, and the towns of Woodside and Portola Valley (see Figure 3.10-1, Sheets 1 through 3). The San Francisco Bay shoreline supports an elaborate system of sloughs, estuarine marshes, and salt ponds. As you move west of U.S. Highway 101 and I-280, land uses are generally occupied with residential and mixed urban development. In the northwest portion of this region, west of I-280, remains largely undeveloped, consisting of open space, forested, and woodland areas in the Santa Cruz Mountains.

North Coastside

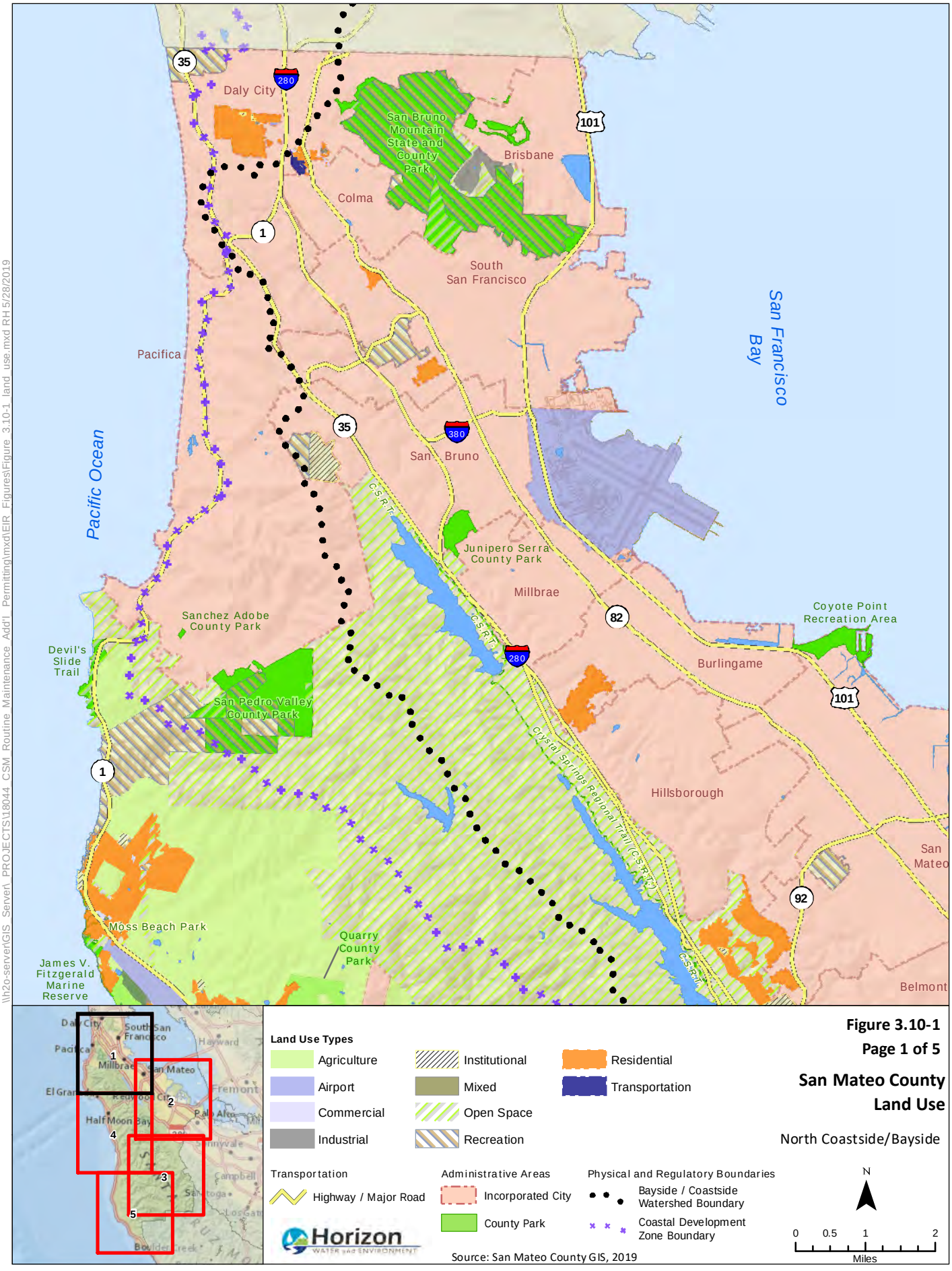
The North Coastside region is relatively narrow area along the Pacific coast from the San Francisco/San Mateo County border south to Half Moon Bay. The northern portion of the region is largely developed along the coastline, in the cities of Daly City and Pacifica. Many smaller communities (e.g., Montara, Moss Beach, El Granada, and Half Moon Bay) are situated along the coastline to the south. Development within the smaller communities primarily consists of a mix of residential, institutional, public recreation, urban open space, and agriculture (see Figure 3.10-1, Sheets 1 and 4). Just inland from the coast, agricultural and open space areas dominate much of the land.

Central Coastside

The Central Coastside region extends from the southern flanks of Montara Mountain south to the Pomponio Creek Watershed, and from the Pacific Ocean east to Skyline Boulevard (SR 35). In comparison to the North Coastside region, this region is sparsely developed largely due to the presence of several open space preserves (e.g., Purisima Creek Redwoods, El Corte de Madera Creek, Tunitas Creek Open Space Preserve) and steep topography. However, coastal terraces and alluvial valleys support fairly widespread farming and livestock grazing outside of open space preserves. Thus, land uses in this region primarily consist of agricultural uses along the coastline and a mix of open space and timberland as you head east (see Figure 3.10-1, Sheet 4).

South Coastside

The South Coastside region encompasses the southwest portion of San Mateo County from the Pescadero Creek Watershed south to the Santa Cruz County boundary, and Skyline Boulevard (SR 35) west to the Pacific Ocean. Urban land uses are very minimal throughout this region. The majority of this region consists of undeveloped, open space lands including the State of California Pescadero Marsh Natural Preserve. Some of the gradually sloped coastal areas support farming and ranching activities. Thus, land uses primarily consist of agricultural and public recreation along the coast, and a mix of open space, timberland, and public recreation as you head the east (see Figure 3.10-1, Sheet 5).



Land Use Types

- Agriculture
- Airport
- Commercial
- Industrial
- Institutional
- Mixed
- Open Space
- Recreation
- Residential
- Transportation

Transportation

- Highway / Major Road

Administrative Areas

- Incorporated City
- County Park

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Source: San Mateo County GIS, 2019

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Figure 3.10-1
Page 1 of 5

San Mateo County Land Use

North Coastside/Bayside

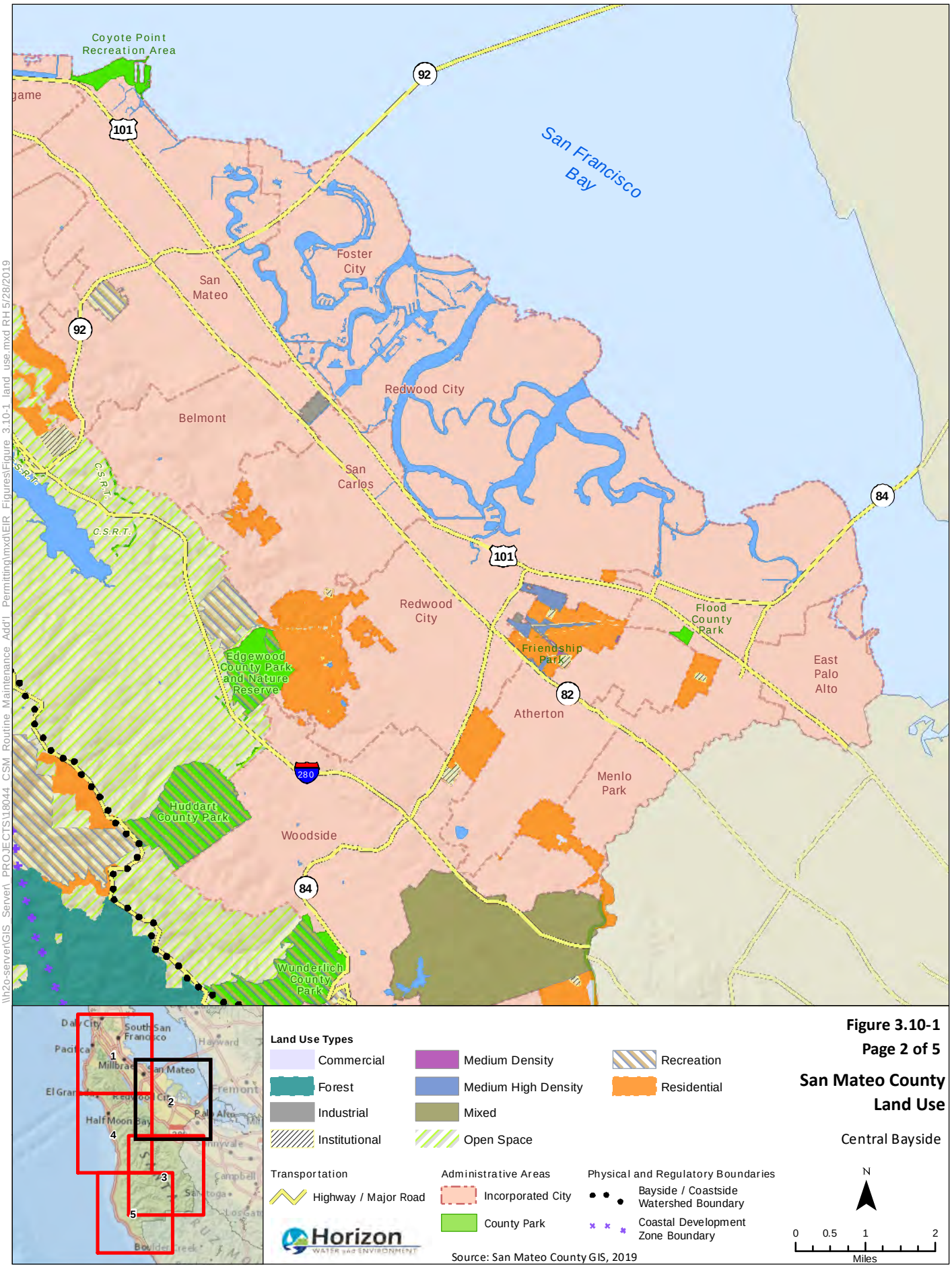

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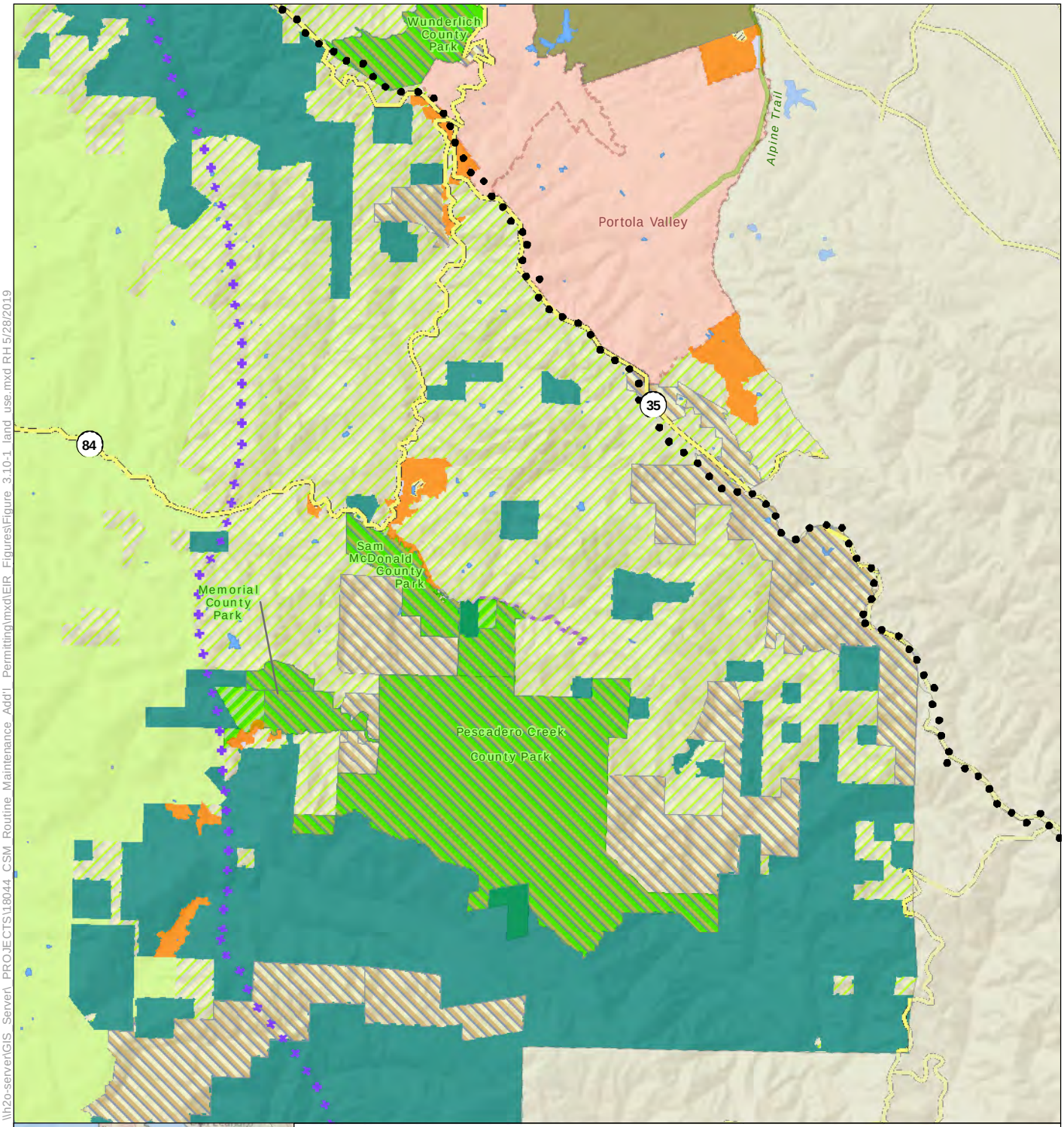
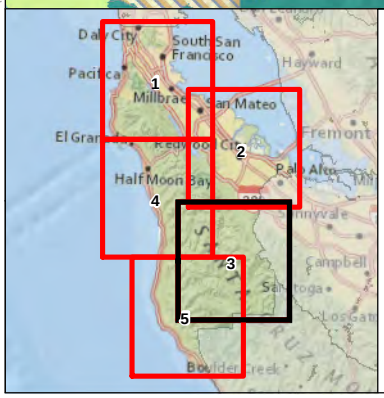
Figure 3.10-1
Page 2 of 5

San Mateo County Land Use

Central Bayside





Land Use Types

- Agriculture
- Commercial
- Forest
- Institutional
- Mixed
- Open Space
- Recreation
- Residential

Transportation

- Highway / Major Road

Administrative Areas

- Incorporated City
- County Park

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Source: San Mateo County GIS, 2019

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Figure 3.10-1

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San Mateo County Land Use

South Bayside

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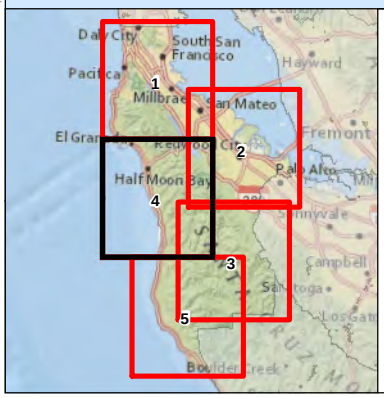

Land Use Types

- Agriculture
- Airport
- Commercial
- Forest
- Industrial
- Institutional
- Open Space
- Recreation
- Residential

Transportation
- Highway / Major Road

Administrative Areas
- Incorporated City
- County Park

Physical and Regulatory Boundaries
- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Source: San Mateo County GIS, 2019

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Figure 3.10-1
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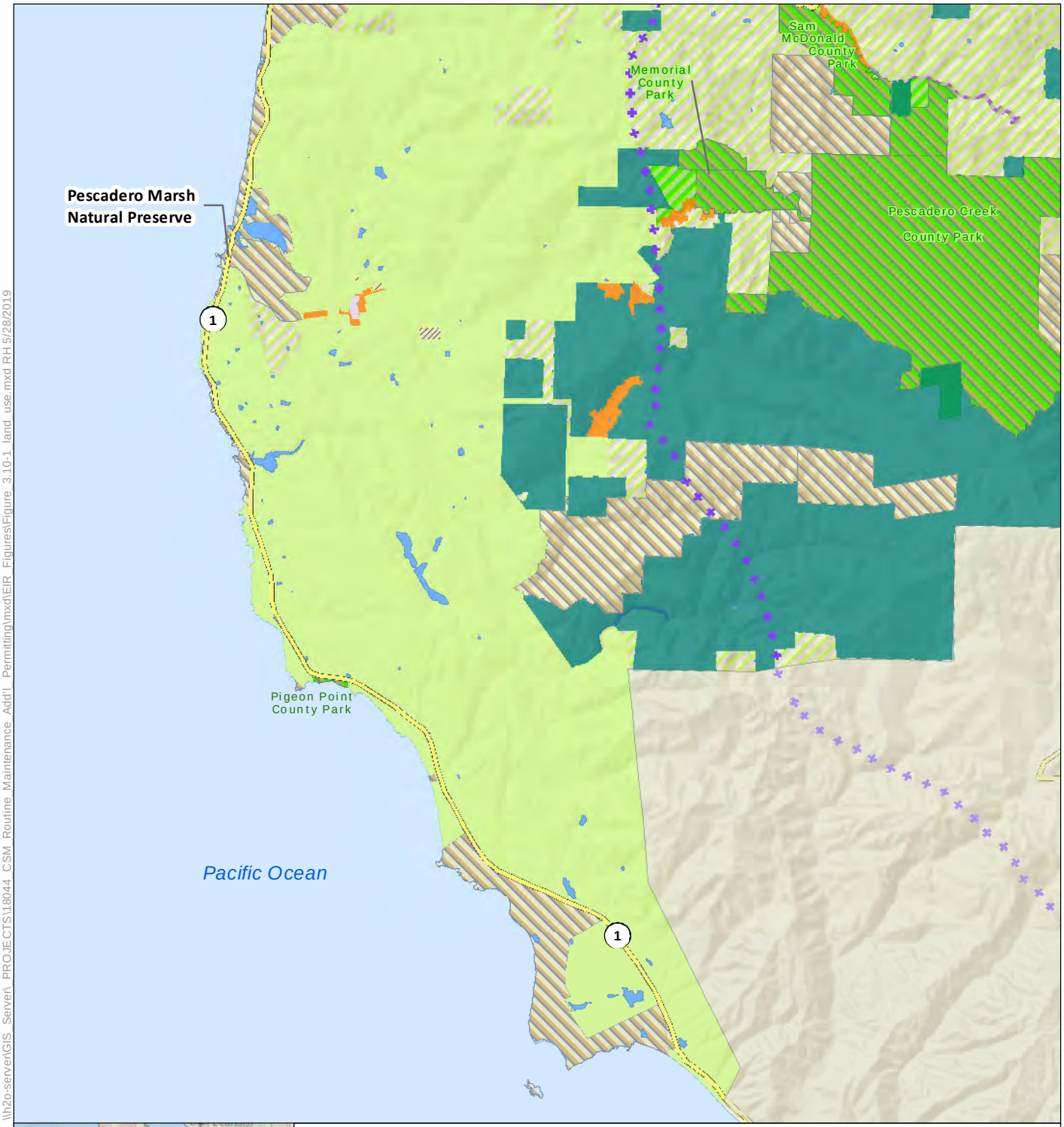
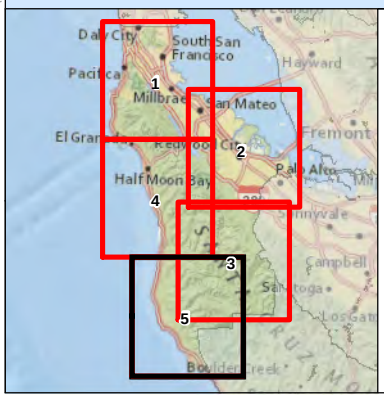
San Mateo County Land Use

Central Coastside





Land Use Types

- Agriculture
- Commercial
- Forest
- Institutional
- Open Space
- Recreation
- Residential

Transportation

- Highway / Major Road

Administrative Areas

- Incorporated City
- County Park

Physical and Regulatory Boundaries

- Bayside / Coastside Watershed Boundary
- Coastal Development Zone Boundary

Source: San Mateo County GIS, 2019

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Figure 3.10-1

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San Mateo County Land Use

South Coastside

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3.10.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

No federal laws, regulations, and policies related to land use and planning are applicable to the program.

State Laws, Regulations, and Policies

California Coastal Act

The California Coastal Act of 1976 (Coastal Act) requires new development (e.g., buildings, roads, pipe, and utility lines) that occur within the Coastal Zone to obtain a Coastal Development Permit from either the California Coastal Commission or the local government. In partnership with coastal cities and counties, the California Coastal Commission plans and regulates the use of land and water in the Coastal Zone. The Coastal Act includes specific policies (Division 20 of the Public Resources Code) that address issues such as shoreline public access and recreation, agricultural resources, terrestrial and marine habitat protection, visual resources, landform alteration, water quality, transportation, development design, among other issues. Specific policies of the Coastal Act that are relevant to the proposed program include:

Section 30210. Access; recreational opportunities; posting. In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211. Development not to interfere with access. Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30221. Oceanfront land; protection for recreational use and development. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

Section 30236. Water supply and flood control. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (l) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the flood plain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

While the California Coastal Commission is the primary agency that issues Coastal Development Permits, once a local agency has a Local Coastal Program that has been certified by the Commission, that local agency takes over the responsibility for issuing Coastal Development Permits. As described under "Local Laws, Regulations, and Policies," the County has a Local Coastal Program in place. As such, the County has responsibility for implementing

the Coastal Act in unincorporated San Mateo County. A project can be appealed to the California Coastal Commission by any applicant or person as after the project has gone through the local appeals process. However, the grounds for appealing are limited to whether the project conforms to the requirements of the Local Coastal Program (LCP) or public access policies of the Coastal Act. The Coastal Act appeal process is an important process in ensuring that coastal resources are appropriately protected statewide.

McAteer-Petris Act

The McAteer-Petris Act was enacted in 1965 and established the San Francisco Bay Conservation and Development Commission (BCDC). At that time, BCDC was a temporary state agency tasked with preparing a plan for the long-term use of the Bay. In 1969, the McAteer-Petris Act was amended to make BCDC a permanent agency and to incorporate the policies of the San Francisco Bay Plan ("Bay Plan") (BCDC 1969) into state law. BCDC has permit authority over shoreline areas subject to tidal action up to the mean high tide line. This includes sloughs, tidelands, submerged lands, and marshlands lying between the mean high tide and 5 feet above mean sea level for areas with Bay frontage, and the shoreline band or 100 feet landward from the Bay shoreline. BCDC regulates filling, dredging, and changes in use in the Bay. The Bay Plan provides policy direction for BCDC's permit authority regarding placement of fill, extraction of materials, determining substantial changes in land use, water, or structures within its jurisdiction, protection of the Bay habitat and shoreline, and maximizing public access to the Bay.

BCDC is primarily concerned about the placement of new "fill" (generally defined as any material in or over the water surface, including pilings or structures placed on pilings) in the Bay. BCDC also regulates new development within 100 feet of the shoreline to ensure that maximum feasible public access to and along the Bay is provided. Maintenance activities that take place within 100 feet of the Bay shoreline fall under BCDC's jurisdiction. BCDC's jurisdiction applies to the easternmost portions of the County along the Bay shoreline including Coyote Point Park, which is managed by the County Parks Department.

Local Laws, Regulations, and Policies

County of San Mateo General Plan

The *County of San Mateo General Plan* (1986) provides overall policy guidance to assure orderly development balanced with conservation of unincorporated County resources. The County's General Plan provides information on existing natural and man-made conditions of the physical environment; identifies applicable plans, regulations, and requirements that affect planning decisions; indicates the type and location of development foreseen within the County along with development regulations; and guides the local decision-making process. Appendix C includes goals and policies of the County's General Plan that are most relevant to the proposed program.

County of San Mateo Local Coastal Program

In 1980, the San Mateo County Board of Supervisors and the California Coastal Commission approved the San Mateo County's Local Coastal Program. Development must comply with the policies in the Local Coastal Program developed by the County's Planning and Building Department. In 1981, the County's Planning and Building Development assumed responsibility for implementing the State Coastal Act in the unincorporated area of the

County, including issuance of Coastal Development Permits. Policies from the County's Local Coastal Program (County of San Mateo 2013) that are applicable to the proposed program are presented in Appendix C.

All development planned in the Coastal Zone (shown in Figure 2-1) requires either issuance of a Coastal Development Permit or a Coastal Development Permit Exemption. For a permit to be issued, development must comply with the policies of the LCP and other relevant County ordinances. Thus, under the proposed program, a Coastal Development Permit must be obtained for maintenance activities that are planned within the Coastal Zone or, in some cases, an exemption must be obtained from these permit requirements.

Other General Plans

Proposed maintenance activities within County parks and County-owned land are exempt from municipal building and zoning ordinances. More specifically, per Government Code Section 53090 et seq., which forms an article entitled "Regulation of Local Agencies by Counties and Cities," generally requires each "local agency" to "comply with all applicable building ordinances and zoning ordinances of the county or city in which the territory of the local agency is situated." However, as stated in Section 53090, the definition of "local agency" does not include the state, county or city. Thus, County parks and County-owned property is not subject to city building and zoning ordinances. While the County is not legally bound by the land use policies of municipalities in which some County parks and other maintenance sites are located, general plan policies of municipalities affected by the proposed program are summarized in Appendix C to the extent they provide pertinent planning information and a context to evaluate the proposed program under California Environmental Quality Act (CEQA) and compare how proposed program activities compare or are consistent with local goals and policies. More specifically, Appendix C includes the goals and policies from local general plans for jurisdictions in which County parks or regional trails are located. This includes the general plans for the cities of: Burlingame, San Mateo, Redwood City, Millbrae, San Bruno, Woodside, Half Moon Bay, Pacifica, Colma, Daly City, South San Francisco, Menlo Park, and Brisbane.

County of San Mateo Zoning Regulations

The County's zoning regulations specifies whether zones can be used for residential, commercial, institutional, or open space purposes. Zoning may also regulate lot size, placement, bulk (or density) and the height of structures. The zoning of a particular land parcel specifies the types of land uses that are allowed and prohibited. While the County's anticipated maintenance sites are located within various zoning districts, the majority of the Coastside DPW maintenance sites are located in the Planned Agricultural District/Coastal Development District (PAD/CD) (County of San Mateo Planning and Building Department 2019). The purpose of the PAD/CD District is to preserve existing and potential agricultural operations in the County in accordance with the requirements of the LCP. Along the Bayside, most of the currently identified maintenance sites are located in incorporated areas. Maintenance sites located within the central portion of San Mateo County and County Parks are primarily located in the Resource Management District (RM) (County of San Mateo Planning and Building Department 2019). The purpose of the RM District is to protect open space areas in the County.

3.10.3 IMPACT ANALYSIS

Methodology

This section describes the methods used to determine the program's impacts and lists the thresholds used to conclude whether an impact would be significant. The analysis of land use and planning was generally qualitative, and included consideration of applicable land use policies, plans, and programs.

Criteria for Determining Significance

Based on Appendix G of the CEQA Guidelines, the County's environmental checklist, and professional expertise, the proposed program would result in a significant impact related to land use and planning if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Conflict with any applicable habitat conservation plan or natural community conservation plan;
- Result in the congregation of more than 50 people on a regular basis;
- Result in the introduction of activities not currently found within the community;
- Serve to encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas (e.g., introduction of new or expanded public utilities, new industry, commercial facilities or recreation activities); or
- Create a significant new demand for housing.

Refer to Section 3.4, *Biological Resources*, for a discussion of applicable habitat conservation plan/natural community conservation plan in the program area. The proposed program would have no effect on housing demand as the program is focused on maintenance of existing County facilities. Therefore, this topic is not discussed further in this section.

Environmental Impacts

Impact LU-1: Division of Existing Communities (Less than Significant)

Proposed maintenance activities along roadways and trails, including culvert repair/replacement, roadway paving and resurfacing, slip-out and slide repairs, trail tread repair and regrading, and vegetation management, could cause temporary disruptions to existing roadways or recreational trails that connect existing communities. As discussed in Section 3.13, *Recreation,* and Section 3.14, *Transportation and Traffic*, temporary impacts associated with disruptions to roadway and recreational access would be less than significant

with adherence to best management practices (BMPs). These BMPs would minimize the area disturbed during maintenance work and would implement appropriate traffic control measures and signage along trails and roadways and within parks. Further, once maintenance activities are complete, access disruptions along roadways and trails that connect to existing communities would cease. Proposed maintenance activities would not permanently affect access to any surrounding land uses, nor create any new permanent, physical barriers between existing communities. Therefore, this impact would be less than significant.

Applicable Best Management Practices

The following BMPs would be implemented to further prevent maintenance activities from substantially disrupting existing roadways and recreational trails that connect existing communities. More specifically, BMPs GEN-17 and GEN-18 would inform the public of any temporary disruptions through signage, on-site traffic safety flaggers, and possibly mail notification (e.g., for heavy equipment/hauling activities that extend beyond the hours of 8 a.m. to 5:30 p.m., Monday through Friday). A description of each BMP is provided in Table 2-2 Chapter 2, *Project Description.*

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

Conclusion

Impacts regarding physical division of established communities would be **less than significant**. However, application of the above-listed BMPs would further avoid and minimize such effects.

Impact LU-2: Incompatibility with Existing Activities and Land Uses and Inconsistencies with Applicable Land Use Plans or Policies (e.g. General Plans, Local Coastal Program, Land Use Designations and Zoning) (*Less than Significant*)

Compatibility with Existing Activities and Land Uses

The County currently conducts routine maintenance activities as individual projects on facilities that they own. The majority of DPW maintenance activities occur along the County's right of way along and within County roads while Parks Department activities occur within County parks and along County trails. Primary activities include sediment removal; culvert, bridge and other storm drainage maintenance; roadside ditch and swale maintenance; vegetation management; trail and road repair; creek bank stabilization; and marina maintenance activities. Thus, the proposed program would not introduce new activities that are not currently found within the County. As stated in Chapter 2, the purpose of the program is to apply a more comprehensive and consistent approach to conducting routine maintenance activities within the County, thus, reducing inconsistencies in maintenance methods, BMPs, and impact avoidance and mitigation approaches.

As shown in Figure 3.10-1 and described above under Section 3.10-1, the program area consists of variety of land uses, including agricultural, residential, open space, and public recreation. Although maintenance activities would primarily occur within County right-of-way or within County Parks, proposed maintenance activities along roadways and trails could result in temporary disruptions to surrounding land uses which could be perceived as short-term incompatibilities with existing land uses. Such disruptions include traffic delays, trail access disruptions, or public safety hazards. Operation of heavy equipment could also contribute to noise and air emissions affecting nearby uses. However, maintenance at any given site would be short in duration (last no longer than a few weeks) and would cease once maintenance work is complete. Refer to the relevant resource sections of Chapter 3 of this draft environmental impact report (DEIR) for a more detailed analysis of the proposed program's effects on environmental resources. Adherence to BMPs and mitigation measures identified throughout this DEIR would ensure that temporary impacts associated with maintenance activities would be less than significant.

In addition, the proposed program would not result in any long-term changes or effects to surrounding existing land uses or inconsistencies with existing land use designations or zoning regulations. Proposed maintenance activities would not be considered "new development" and no new permanent habitat structures would be created nor would the land be altered from its present use. Maintenance activities would occur at existing County or Parks facilities and would not expand and/or create new structures but rather maintain/repair existing structures and County-owned land.

Consistency with Regional and Local Plans, Programs, and Policies

Consistency with the Bay Plan

Maintenance activities that would occur within BCDC jurisdiction include sediment and debris removal, culvert repair/replacement, channel maintenance, bridge maintenance, trail tread repair and re-grading, thinning and pruning vegetation, hazard tree removal, repair of existing shoreline rock slope protection (RSP), marina maintenance activities, floodwall and levee maintenance, and tide gate maintenance. Activities within BCDC jurisdiction require authorization through either a BCDC administrative permit or regionwide permit. Thus, the County would apply for the appropriate permit from BCDC prior to conducting maintenance work. Adherence to BMPs and mitigation measures identified throughout this DEIR along with BCDC permit conditions would ensure that consistency with the with the Bay Plan.

Consistency with Local General Plans

The majority of the program area is within unincorporated San Mateo County, though some County parks, regional trails and DPW sites are located in incorporated areas.

Pursuant to California Government Code Sections 53091 and 53092, the County is exempt from complying with building and zoning policies of municipalities affected by maintenance activities that occur in incorporated areas. Although the program area encompasses the entire County, this analysis focuses on those municipalities that would be directly affected by program activities. Applicable land use plans include General Plans for San Mateo County as well as the cities of Burlingame, San Mateo, Redwood City, Millbrae, San Bruno, Woodside, Half Moon Bay, Pacifica, Colma, Daly City, South San Francisco, Menlo Park, and Brisbane (refer to Appendix C).

In general, goals and policies in the County's and incorporated jurisdictions' General Plans relevant to the proposed program include monitoring and maintaining the local drainage systems, removing siltation and sediment from channels, minimizing the risk of life and property from flooding, protecting and maintaining natural areas, improving water quality, and minimizing effects to biological resources. The proposed program would support the land use goals and policies of the County and its incorporated jurisdictions by providing adequate capacities of channels and stormwater facilities; reducing the risk of roadway flooding and ensuring the structural integrity of bridges and roads, which thereby protects surrounding land uses; enhancing existing County and Parks facilities; and improving public safety by reducing road and fire risk hazards within the program area. Further, adherence to BMPs and implementation of mitigation measures identified throughout this DEIR would protect natural resources within the program area and minimize any temporary impacts associated with maintenance work. Overall, in the long-term, the proposed program would result in a beneficial effect to County and Parks facilities.

CONSISTENCY WITH COASTAL ACT AND LOCAL COASTAL PROGRAM

Maintenance activities that would occur within the Coastal Zone include culvert repair/replacement, creek bank stabilization, vegetation removal, repair of existing shoreline RSP, trail and roadway maintenance, sediment and debris removal, and bridge maintenance. Projects within the Coastal Zone must comply with the LCP policies and require issuance of either a Coastal Development Permit or permit exemption. The proposed program incorporates BMPs that would protect sensitive species and habitat including riparian corridors and wetlands, consistent with the general policies included in the LCP and Coastal Act. Additionally, implementation of mitigation measures identified throughout other resource sections in this DEIR would further reduce environmental impacts of the proposed program and ensure consistency with the LCP and Coastal Act. Lastly, as described above, although maintenance along roadways and trails could result in temporary disruptions to the public, these impacts would be short-term and cease once maintenance in that area is complete. More specifically, in the long-term, proposed maintenance activities would repair and/or enhance public access along the coast (e.g., repair of Devil's slide trail). Thus, the proposed program would be consistent with LCP and California Coastal Act policies that protect shoreline access for the general public.

Based on the above discussion, the Proposed Program would be compatible with existing activities and land uses and would not result in inconsistencies with regional and local plans and policies. This impact would be less than significant.

Applicable Best Management Practices

The following BMPs would be implemented to further prevent maintenance activities from resulting in impacts to existing land uses or conflicting with existing zoning and land use designations. Descriptions of each BMP are provided in Chapter 2, *Project Description.*

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

Conclusion

This impact regarding compatibility of existing land uses and consistency with local plans and policies would be **less than significant**. However, application of the above-listed BMPs would provide further avoidance and minimization of potential effects.

Impact LU-3: Result in the Congregation of More Than 50 People on a Regular Basis (*No Impact*)

Proposed maintenance activities would typically involve no more than ten workers at each maintenance site at a given time. Given that few workers would be required on site and the nature of the proposed program (i.e., limited to routine maintenance work at County and Parks facilities), the program would not result in the congregating of more than 50 people on a regular basis.

Applicable Best Management Practices

None applicable.

Conclusion

For the reasons described above, the program would result in **no impact**.

Impact LU-4: Encourage Off-Site Development of Undeveloped Areas or Increase Development Intensity in Existing Developed Areas (*No Impact*)

The main objective of the proposed program is to maintain the structural integrity of existing County and Parks facilities. The program would not expand and/or construct new facilities that would increase development intensity in undeveloped or developed areas of the County. Therefore, the proposed program would not encourage off-site development of presently undeveloped areas or increase development intensity of already developed areas.

Applicable Best Management Practices

None applicable.

Conclusion

For the reasons described above, the proposed program would result in **no impact**.

3.11 NOISE AND VIBRATION

This chapter describes the existing noise environment in the vicinity of the County of San Mateo Routine Maintenance Program (proposed program), presents relevant noise and vibration regulations, identifies sensitive noise and vibration receptors that could be affected by the proposed program, and evaluates the noise and vibration impacts of the proposed program. Mitigation measures are prescribed to reduce significant noise and vibration impacts. Technical information used in preparing this chapter is provided in **Appendix E**.

3.11.1 ENVIRONMENTAL SETTING

Study Area

For the purposes of this noise and vibration analysis, the study area is defined as the area surrounding the proposed program maintenance sites within San Mateo County (County).

Noise Principles and Descriptors

Noise Background

In the California Environmental Quality Act (CEQA) context, noise can be defined as unwanted sound. Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level, or sound intensity. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terminology used in this chapter.

- **Decibel (dB)** is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude.
- **A-weighted decibel (dBA)** is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Maximum sound level (L_{max})** is the maximum sound level measured during a given measurement period.
- **Minimum sound level (L_{min})** is the minimum sound level measured during a given measurement period.

- **Equivalent sound level (L_{eq})** is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during that same period.
- **Day-night sound level (L_{dn})** is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighting adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.
- **Community noise equivalent level (CNEL)** is the energy average of the A-weighted sound levels during a 24-hour period, with 5 dB added to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. **Table 3.11-1** presents approximate noise levels for common noise sources, measured adjacent to the source.

Table 3.11-1. Examples of Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)
Jet flyover at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawnmower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quiet suburban area, nighttime	30
Quiet rural area, nighttime	20

Notes: Caltrans = California Department of Transportation; dBA = A-weighted decibel.

Source: Caltrans 2009

Vibration Background

Groundborne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most groundborne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level measured

with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations attenuate much more rapidly than do those characterized by low frequencies, so that in a far-field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When groundborne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as groundborne noise.

Groundborne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough groundborne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

Existing Noise Environment

The existing noise environment varies greatly across the proposed program area. Some maintenance sites are located close to major sources of noise including Highway 101, Interstate 280, other highways, railroad lines, San Francisco International Airport, Half Moon Bay Airport, and San Carlos Airport. The proposed program's anticipated near-term maintenance sites are located in both noisier urban areas and quieter parks and open space areas in more rural parts of the County.

Sensitive Receptors

Some land uses and their occupants are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, places of worship, hospitals, nursing homes, auditoriums, and parks and other outdoor recreation areas generally are considered to be more sensitive to noise than are commercial and industrial land uses. Given the proposed program's size and duration, individual sensitive receptors have not been identified, however it is assumed that receptors in the vicinity of program activities could include any of the receptor types mentioned previously, in particular single-family residences in rural, suburban, and urban settings. Maintenance activities would occur mostly along creeks, roads, trails, culverts, and at County-owned facilities.

3.11.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

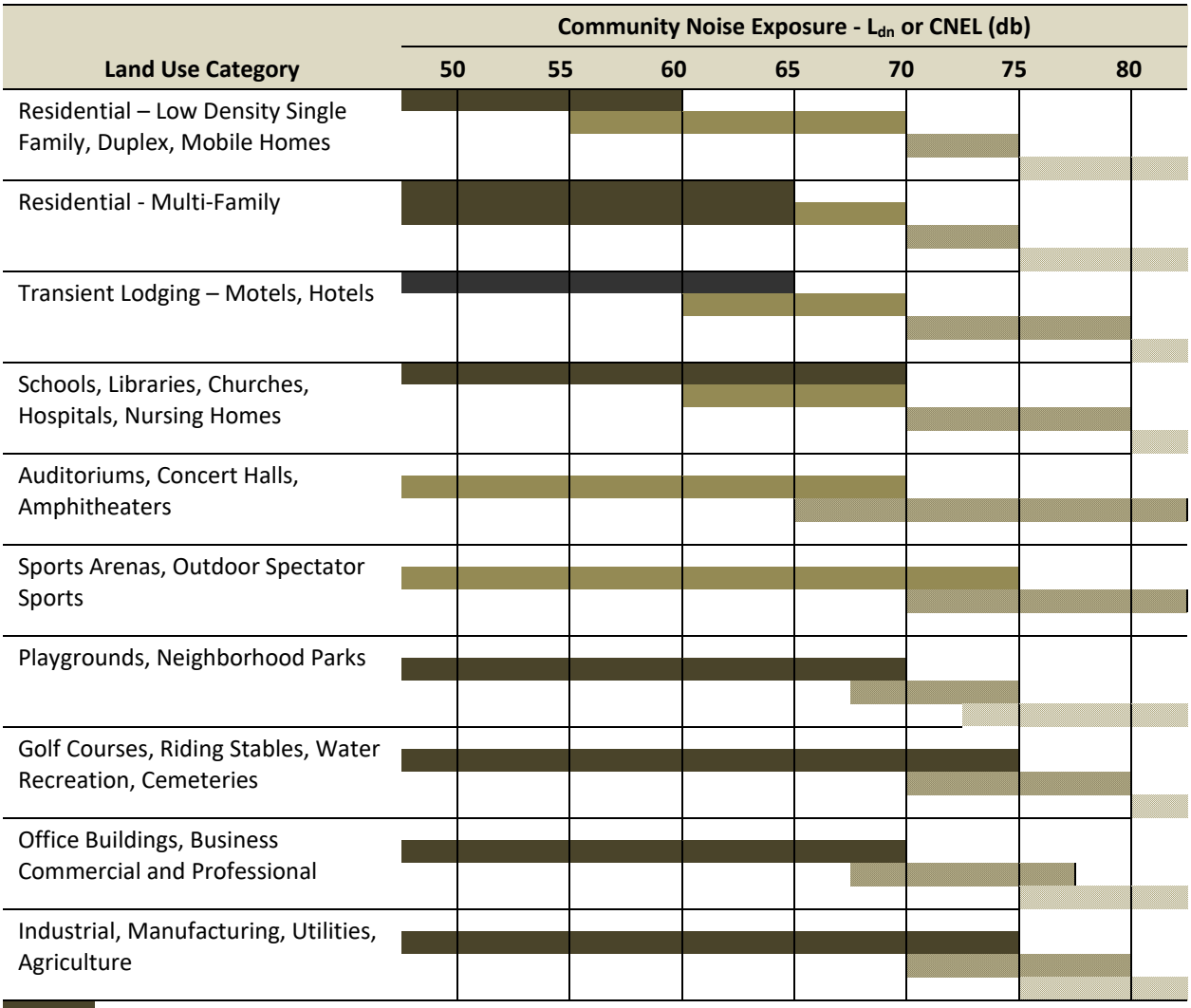
No federal laws, regulations, or policies for construction-related noise and vibration that apply to the proposed program. However, the Federal Transit Administration (FTA) Guidelines for Construction Vibration in Transit Noise and Vibration Impact Assessment state that for evaluating daytime construction noise impacts in outdoor areas, a noise threshold of 90 dBA L_{eq} and 100 dBA L_{eq} should be used for residential and commercial/industrial areas, respectively (FTA 2018).

For construction vibration impacts, the FTA guidelines use an annoyance threshold of 80 VdB for infrequent events (fewer than 30 vibration events per day) and a damage threshold of 0.12 inches per second (in/sec) PPV for buildings susceptible to vibration damage (FTA 2018).

State Laws, Regulations, and Policies

California requires each local government entity to implement a noise element as part of its general plan. California Administrative Code, Title 4, presents guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The state land use compatibility guidelines are listed in **Table 3.11-2**.

Table 3.11-2. State Land Use Compatibility Standards for Community Noise Environment



Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: California Governor's Office of Planning and Research 2017

Local Laws, Regulations, and Policies

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 development plans, and noise ordinances set forth the specific standards and procedures for addressing particular noise sources and activities. General plans recognize that different types of land uses have different sensitivities toward their noise environment; residential areas are generally considered to be the most sensitive type of land use to noise, and industrial/commercial areas are generally considered to be the least sensitive. **Table 3.11-3** includes a summary of local noise standards for jurisdictions where near-term maintenance activities are proposed.

Table 3.11-3. Noise Standards for the County of San Mateo and Incorporated Cities where Maintenance Activities are Proposed

Jurisdiction	Noise Standards
County of San Mateo	The County of San Mateo Noise Ordinance exempts activities conducted on public parks, in addition to, noise associated with construction, repair, or grading during the hours of 7:00 A.M. to 6:00 P.M. on weekdays and 9:00 A.M. to 5:00 P.M. on Saturdays.
Brisbane	The City of Brisbane Noise Ordinance exempts activities conducted on public parks and limits construction to between the hours of 7:00 A.M. to 7:00 P.M. on weekdays and 9:00 A.M. to 7:00 P.M. on weekends and holidays.
Colma	Construction and governmental activities are generally exempt from noise limitations in the Town of Colma's municipal code.
Daly City	The Daly City municipal code places limits on noise generated between 10:00 P.M. and 6:00 A.M.
South San Francisco	The City of South San Francisco municipal code exempts utility and street repairs from noise regulations. Permitted construction and landscape maintenance activities are allowed on weekdays between 8:00 A.M. and 8:00 P.M., Saturdays between 9:00 A.M. and 8:00 P.M., and on Sundays and holidays between 10:00 A.M. and 6:00 P.M. if no individual piece of equipment produces a noise level exceeding 90 dB at 25 feet or the noise level at the edge of the property does not exceed 90 dB.
San Bruno	The City of San Bruno's General Plan describes a CNEL of 70 as conditionally acceptable for residential areas and at schools, libraries, churches, hospitals, and nursing homes. The City's noise ordinance places limits on the use of construction equipment within 500 feet of residential zones based on the time of day and the equipment's noise level. Additional restrictions relating to time of day, noise duration, and ambient base noise levels are in place for noise levels from equipment and machinery as measured at residential property lines. For example, during the hours of 7 A.M. and 10 P.M., any outside construction or repair work on any project within 500 feet of a residential zone shall not exceed a noise level of 85 dB as measured at one hundred feet.
Millbrae	The City of Millbrae municipal code limits construction, alteration or repair work to the following hours: Monday through Friday 7:30 A.M. to 7:00 P.M., Saturday 8:00 A.M. to 6:00 P.M., and Sunday and Holidays 9:00 A.M. to 6:00 P.M.
Burlingame	The City of Burlingame's municipal code exempts emergency work or repairs by public agencies from noise regulations.

San Mateo	The City of San Mateo Noise Element lists CNELs of 60-70 as conditionally acceptable for most noise-sensitive land uses. The City's noise ordinance allows construction activities which meet certain criteria and are authorized by a valid city permit, on weekdays between 7:00 a.m. and 7:00 p.m., on Saturdays between 9:00 a.m. and 5:00 p.m. and on Sundays and holidays between 12:00 p.m. and 4:00 p.m. The City's criteria mandates that no individual piece of equipment shall produce a noise level exceeding 90 dB at a distance of 25 feet, or the noise level outside of the construction area shall not exceed 90 dB.
Redwood City	The Redwood City Noise Ordinance limits construction within 500 feet of a residential district to between 7:00 a.m. and 8:00 p.m. weekdays if the noise level generated exceeds the local ambient at any point within the residential district and outside of the property where work is taking place. Noise from construction activities that exceeds 110 dB at any point within a residential district and outside of the property where work is taking place is prohibited. The use of any individual piece of equipment that generates noise levels above 110 dB measured from a distance of 25 feet within a residential district is also prohibited.
Woodside	The Town of Woodside Noise Element lists maximum noise levels of 55 Ldn for residential and open space land uses and 60 Ldn for commercial land uses. The Town's municipal code limits hours of construction on weekdays between 7:30 a.m. and 5:30 p.m., and on Saturdays between 8:00 a.m. and 1:00 p.m.
Portola Valley	The Town of Portola Valley Noise Element establishes non-transportation noise standards for receiving land uses. Daytime (7:00 a.m. to 10:00 p.m.) standards are 50 Leq and 65 Lmax for residential land uses, and 55 Leq for other sensitive land uses including medical, convalescent, and religious facilities, schools, libraries, museums, playgrounds, and parks. The Town's noise control ordinance limits construction activities to between 8:00 a.m. and 5:30 p.m. on weekdays.
Half Moon Bay	The City of Half Moon Bay Noise Ordinance places limits on noise from construction between the hours of 10:00 p.m. and 8:00 a.m. Additional limits apply to operation of certain equipment, such as pile drivers and pneumatic hammers, between the hours of 8:00 p.m. and 7:00 a.m.
Menlo Park	The City of Menlo Park Municipal Code contains exceptions from noise limits for: ▪ construction activities performed between 8:00 a.m. and 6:00 p.m. on weekdays ▪ property owners undertaking construction activities to maintain or improve their property on weekends and holidays between 9:00 a.m. and 5:00 p.m. ▪ powered equipment used on a temporary, occasional or infrequent basis operated between the hours of 8:00 a.m. and 6:00 p.m. on weekdays. No piece of equipment shall generate noise in excess of eighty-five (85) dBA at fifty (50) feet,

Sources: San Mateo County 2019, City of Brisbane 2019, Town of Colma 2017, Daly City 2019, City of South San Francisco 2019, City of San Bruno 2009, City of San Bruno 2019, City of Milbrae 2019, City of Burlingame 2019, City of San Mateo 2010, City of San Mateo 2019, Redwood City 2019, Town of Woodside 2012, Town of Portola Valley 2009, Town of Portola Valley 2019, City of Half Moon Bay 2019, City of Menlo Park 2020.

Airport Land Use Compatibility Plans

There are three public airports in San Mateo County: San Francisco International, Half Moon Bay Airport, and San Carlos Airport. Airport compatibility policy maps for these airports can be found in the airports' respective Airport Land Use Compatibility Plans (ALUCP). The ALUCP documents provide planning area boundary maps and noise contours, present airport land use background information, and discuss existing and potential noise conflicts in the

area (City/County Association of Governments of San Mateo County (C/CAG) 2012, C/CAG 2014, C/CAG 2015).

3.11.3 IMPACT ANALYSIS

Methodology

Noise Analysis

Maintenance activity noise sources would include various pieces of heavy equipment and other machinery. To establish an approximate estimate of noise levels, the FTA recommends that the noisiest two pieces of equipment be used to analyze the anticipated noise levels at sensitive receptors, assuming the following:

- full power operation for a full 1 hour,
- there are no obstructions to the noise travel paths,
- typical noise levels from construction equipment, and
- both pieces of equipment operate at the center of the work area.

Using these assumptions, the noise levels at specific distances can be obtained using the following equation:

$$L_{eq}(equip) = EL_{50ft} - 20log_{10}(D/50)$$

Where:

L_{eq} (equip) = the noise emission level at the receiver at distance D over 1 hour

EL_{50ft} = noise emission level of a particular piece of equipment at a reference distance of 50 feet

D = the distance from the receiver to the piece of equipment, in feet

To add the two noisiest pieces of equipment together, the following equation applies:

$$L_{total} = 10\ log_{10}(10^{\frac{L1}{10}} + 10^{\frac{L2}{10}})$$

Where:

L_{total} = the noise emission level of two pieces of equipment combined

L_1 = the noise emission level of equipment type 1

L_2 = the noise emission level of equipment type 2

These equations were used to compare proposed program maintenance activities to the noise emission limits described in Table 3.11-3. The following assumptions were used to evaluate noise effects of proposed program maintenance activities:

- While the above calculations apply to maintenance equipment, truck traffic to and from the maintenance work sites could also create additional noise for residences and commercial establishments located along haul routes.
- Using typical equipment noise emission levels from Table 12-1 of FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2018) and Table 9.1 of FHWA's *Construction Noise Handbook* (Federal Highway Administration [FHWA] 2019), the noisiest piece of equipment used for any maintenance activity would be a concrete saw, which will not be used during most maintenance activities. Apart from the concrete saw, many types of equipment that will be used for the proposed program's maintenance activities have the similar noise level (85 dBA at 50 feet.).
- Using the equations described above, the estimated distance between the maintenance work site and the nearest sensitive receptors would need to be at least 397 feet to meet the single-family residential CNEL of 70 dBA and 40 feet to meet the FTA and certain cities' standards of 90 dBA.
- It was assumed that most work would not take longer than 10-15 days at any one maintenance site.

Vibration Analysis

Construction activity associated with the operation of heavy equipment and vibratory pile driving may generate localized groundborne vibration and noise. Vibration from ground-disturbing construction activity is typically below the threshold of perception when the activity is more than 50 feet from the receiver. Based on methods described by FTA (2018), the vibration levels at specific distances can be calculated using the following equation:

$$L_{eq}(equip) = EL_{50ft} - 20log_{10}(D/50)$$

Using the most sensitive building types and land use categories, the PPV would have to exceed 0.12 inch per second and the L_{eq} would have to exceed 65 VdB to result in any building damage or vibrational disturbances. For industrial buildings, the PPV would have to exceed 0.5 inch per second to result in any building damage or vibrational disturbances (Caltrans 2009). The typical annoyance level for single-family residences is 80 VdB.

Potential vibration from proposed program maintenance activities was evaluated using the following assumptions:

- Using typical equipment noise emission levels from Table 12-2 of FTA's *Transit Noise and Vibration Impact Assessment* (FTA 2018), the pieces of equipment that would produce the greatest vibration would be the roller and bulldozer. For maintenance activities that don't include either of these equipment items, loaded trucks would be another possible source of vibration.
- Using the equations described above, the estimated distance between the maintenance activity area and the nearest sensitive receptors would need to be at least 73 feet to meet the annoyance level threshold of 80 dBA.
- The distance between each maintenance site and the nearest building would need to be at least 36 feet for activities involving rollers and 21 feet for activities involving

bulldozers to meet the building vibration level threshold of 0.12 inch per second.

Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines and the County's environmental review checklist, the proposed program would have a significant impact related to noise if it would meet any of the following conditions:

- Generate a substantial temporary, periodic, or permanent increase in ambient noise levels in the vicinity of the proposed maintenance sites in excess of standards established in a local general plan or noise ordinance or in the applicable standards of other agencies; or
- Generate excessive ground-borne vibration or ground-borne noise levels; or
- Be located within the vicinity of a private airstrip or an airport land use plan area, or, where such a plan has not been adopted, be within 2 miles of a public airport or public-use airport, such that people residing or working in the maintenance area are exposed to excessive noise levels.

Environmental Impacts

Impact NOI-1: Substantial Temporary or Permanent Increase in Ambient Noise Levels in the Vicinity of Proposed Maintenance Areas in excess of Standards Established in the Local General Plan or Noise Ordinance, or in other applicable Local, State or Federal Standards (*Less than Significant with Mitigation*)

The proposed program's maintenance activities would involve the use of construction equipment, hauling trucks, and employee vehicles that would result in temporary noises and ambient noise level increases. These increases may temporarily affect sensitive receptors in the vicinity. As described above, the estimated distance between the maintenance work site and the nearest sensitive receptors would need to be at least 397 feet to meet the single-family residential CNEL of 70 dBA and 40 feet to meet the FTA and certain cities' standards of 90 dBA. It is possible that maintenance activities and the use of hauling trucks or construction equipment may occur within these distances of residences and cause temporary ambient noise level exceedances.

Maintenance activities on County property would be subject to the County's noise ordinance and applicable local noise standards of local cities and towns. The local ordinances of cities/towns that may be affected by proposed maintenance activities are informative as they indicate what is typically considered appropriate for construction-related noise in the program area. Maintenance activities for the proposed program would generally be conducted during daytime hours (between 8:00 a.m. and 5:30 p.m.) on weekdays within the time windows permitted by the various local jurisdictions described in Table 3.11-3. The County would implement BMP GEN-17 to ensure that noise produced by hauling trucks for the maintenance activities is limited to the normal daytime working hours. Nonetheless, since the maintenance activity timeframes and schedules for each individual maintenance activity have not yet been determined, proposed maintenance activities have potential to expose people (particularly residential receptors) to noise levels exceeding the above-listed timeframe and other standards in the local general plans and noise ordinances. This impact

is considered significant. With implementation of **Mitigation Measure NOI-1 (Employ Noise-Reducing Construction Practices)**, **Mitigation Measure NOI-2 (Advance Notification of Nearby Sensitive Receptors)** and **Mitigation Measure NOI-3 (Limit Nighttime Construction Noise)**, the County would be required to ensure that maintenance activities occur in a manner consistent with local noise standards when operating during allowable daytime hours outlined above, and provide notification of local sensitive receptors (residents).

As shown in Table 3.11-3, the County of San Mateo Noise Ordinance exempts activities conducted on public parks, in addition to, noise associated with construction, repair, or grading during the hours of 7:00 A.M. to 6:00 P.M. on weekdays and 9:00 A.M. to 5:00 P.M. on Saturdays. In addition, some other local jurisdictions' municipal codes (ex. City of Burlingame, South San Francisco) contain exemptions for noise from construction and maintenance activities performed on public parks or by, or for, public utilities or street repairs.

Applicable Best Management Practices

The County would implement the following BMP to minimize temporary impacts. A description of this BMP is provided in Table 2-3 in Chapter 2, *Project Description.*

- BMP GEN-17: Maintain Traffic Flow

Conclusion

With implementation of the above-listed BMP, impacts would still be potentially significant given that temporary noise impacts from the use of construction equipment for maintenance activities would not be reduced or limited to certain hours of the day. Implementation of Mitigation Measures NOI-1, NOI-2, and NOI-3 would require that maintenance activities be conducted in a manner consistent with local noise standards.

Once maintenance activities are complete at a particular site, the proposed program's facilities and sites would not generate any new or excess noise levels. Therefore, there would be no permanent noise impacts or conflicts with any local, state, or federal standards. Implementation of Mitigation Measures NOI-1, NOI-2, and NOI-3 would reduce this impact to **less than significant with mitigation**.

Mitigation Measure NOI-1: Employ Noise-Reducing Maintenance Practices

The following measures will be implemented by the County to reduce adverse effects from maintenance activity noise in locations where noise-sensitive receptors could be adversely affected:

- Locate stationary equipment as far as practical from noise-sensitive land uses;
- Use electrified or otherwise quieter equipment when practical;
- Use sound-control devices on equipment that are more effective than devices originally provided on the equipment;
- Use noise-reducing enclosures around noise-generating equipment; and

- Install temporary barriers between noise sources and noise-sensitive land uses, or take advantage of existing barrier features (e.g., terrain and structures) to block sound transmission.

When determining haul truck routes, consideration will be given to altering haul routes to avoid sensitive receptors when feasible.

Mitigation Measure NOI-2: Advance Notification of Nearby Sensitive Receptors

The County will notify sensitive receptors located within 400 feet of maintenance sites at least one week prior to performing maintenance work.

Mitigation Measure NOI-3: Limit Nighttime Construction Noise

When feasible, the County will ensure that no construction activities are conducted in close proximity (500 feet) to a residence outside the hours of 8:00 a.m.–5:30 p.m. on weekdays (or the applicable specific hours permitted by the local jurisdiction if extended outside of this time period) unless a special exemption permit allowed by the local jurisdiction is obtained.

Impact NOI-2: Generation of Excessive Groundborne Vibration or Groundborne Noise Levels (*Less than Significant with Mitigation*)

Maintenance activities associated with the operation of heavy equipment may generate localized groundborne vibration. Vibration from non-impact construction activity is typically below the threshold of perception when the activity is more than about 50 feet from the receptor. Multiple maintenance activities would involve the use of bulldozers, rollers, and/or loaded trucks, which are substantial sources of equipment-related vibration. The use of loaded trucks would likely involve travel along residential roads in San Mateo County.

Table 3.11-4 summarizes construction equipment that would be used during maintenance activities that would generate major sources of vibration and the distances at which various vibration thresholds would be met.

Table 3.11-4. Maintenance Equipment and Vibration Distances

Equipment	PPV at 25 feet	Distance to PPV of 0.12 in/sec	Noise Vibration Level at 25 feet	Distance to Noise Vibration of 80 VdB[1]	Distance to Noise Vibration of 65 VdB[1]
Vibratory Roller	0.21	36 feet	94 VdB	73 feet	232 feet
Large Bulldozer	0.089	21 feet	87 VdB	43 feet	135 feet
Loaded Trucks	0.076	18 feet	86 VdB	40 feet	125 feet

Notes: Calculations are provided in Appendix E.
[1] This is the human perception threshold. 65 VdB is the groundborne vibration annoyance level for buildings with sensitive interior operations, and 80 VdB is the federal groundborne vibration annoyance level.

Given the uncertainty in the exact location of future maintenance activities, multiple sensitive receptors may be located within the calculated vibration perception and annoyance threshold distances. Implementation of BMP GEN-17 would minimize vibration produced by

hauling trucks. However, even with implementation of BMP GEN-17, vibration effects on sensitive receptors would be potentially significant. Implementation of **Mitigation Measure NOI-4 (Implement Vibration Reduction Measures)** would reduce construction-related vibration impacts.

Applicable Best Management Practices

The County would implement the following BMP to ensure that vibration, produced by the use of hauling trucks for the proposed maintenance activities, is minimized in residential areas. A description of this BMP is provided in Table 2-3 in Chapter 2, *Project Description.*

- BMP GEN-17: Maintain Traffic Flow

Conclusion

While BMP GEN-17 would reduce vibration effects from hauling trucks, maintenance activities could result in temporary vibration effects that exceed annoyance and perception thresholds. Given the temporary nature of vibration resulting from maintenance activities and with implementation of Mitigation Measure NOI-4, this impact would be reduced to **less than significant with mitigation**.

Mitigation Measure NOI-4: Implement Vibration Reduction Measures.

The County will implement the following vibration-reducing measures during construction activities which could generate substantial vibration to minimize impacts on nearby sensitive receptors:

- Ensure proper tuning of vibration-causing equipment.
- Use vibration damping devices to the extent feasible.
- Limit use of vibratory equipment to the extent feasible and do not overlap use of vibratory equipment. Where possible, maintain a distance of 20+ feet from buildings.
- Use electric stationary equipment (e.g., generators) where feasible.
- Implement noise and/or vibration shields, such as sound aprons or temporary enclosures with sound-absorbing material, on or around construction equipment. For all maintenance activities involving the use of construction equipment or hauling trucks occurring within 75 feet of residences at any time of day, install a temporary noise and vibration barrier between the project site and the nearest sensitive receptors. Following the completion of maintenance activities within that distance, the barrier will be removed.

Impact NOI-3: Be Located in the Vicinity of a Private Airstrip or an Airport Land Use Plan Area, or, within 2 miles of a Public Airport, and Expose People Residing or Working in the Project site to Excessive Noise Levels (*Less than Significant with Mitigation*)

The proposed program is not located in the vicinity of a private airstrip or airport. Implementation of the proposed program's activities at airport sites or within 2 miles of airports would potentially expose the program's workers to temporary excessive noise levels from airport operations. Factors affecting the noise levels to which workers may be exposed from airport operations would include proximity of proposed maintenance sites to an airport, frequency or duration of plane takeoffs or landings, duration of maintenance activities, and noise reducing or shielding structures or terrain between the airport and the maintenance site.

As described above, the public airports in San Mateo County are San Francisco International, and the two County-owned airports, San Carlos and Half Moon Bay; while Moffett Field and Palo Alto Airport are located outside San Mateo County, they are within two miles of the program area.

There are multiple routine maintenance sites in the vicinity of airports in the program area and some activities such as vegetation management may take place at the two County-owned airports. Maintenance activities at individual sites would be temporary (fewer than 10-15 days) and infrequent, and, for most activities outside of the airports, unlikely to expose maintenance workers to excessive noise levels. However, employees who perform maintenance activities at County airports have a greater potential to experience excessive noise levels. This impact would be significant. For maintenance activities conducted at County-owned airports, implementation of **Mitigation Measure NOI-5 (Employee Best Management Practices at Airports)** would ensure that maintenance workers used proper personal protective equipment and performed maintenance operations in such a manner that workers were not exposed to excessive noise levels.

Applicable Best Management Practices

None applicable.

Conclusion

With implementation of Mitigation Measure NOI-5, maintenance work at County airports would be performed such that workers' exposure to significant noise levels from airport operations would be minimized. Further, all maintenance activities would be temporary and infrequent. Therefore, this impact would be **less than significant with mitigation**.

> **Mitigation Measure NOI-5: Employee Best Management Practices at Airports.**
>
> The County will require that employees performing any maintenance activities within an airport are supplied with and wear personal protective equipment (i.e., noise-reducing headphones or earplugs) to protect against excessive noise levels. Further, to the extent feasible, maintenance activities would be performed during periods of time when the frequency of plane landings/takeoffs is minimal.

3.12 PUBLIC SERVICES AND UTILITIES

This section discusses the existing conditions, regulatory setting, and effects of the County of San Mateo Routine Maintenance Program (proposed program) related to public services and utilities. Public services are police and fire services, emergency services, and solid waste services; utilities are underground and overhead utilities, including sewer, water supply services, stormwater, telecommunications, electric power, and natural gas.

As described in Section 3.1, the proposed program would not involve construction of new facilities that would cause substantial growth and subsequently increase the demand for public schools. As such, the proposed program would have no effect on schools and this topic is not discussed further in this section. Refer to Section 3.9, *Hydrology and Water Quality*, for a discussion of stormwater management issues. For analysis of potential impacts on parks and other recreational uses, refer to Section 3.13, *Recreation*. Refer to Section 3.7, *Greenhouse Gas and Energy* for a discussion of energy resources.

3.12.1 ENVIRONMENTAL SETTING

Police Protection

Law enforcement and public safety services in the program area are provided by a combination of County of San Mateo (County) and City departments. The San Mateo County Sheriff's Office employs 800 personnel, serves 750,000 residents and receives approximately 111,200 calls per year (San Mateo County Sheriff's Office 2018). The San Mateo County Sheriff's Office provides patrol services for more than 70 percent of the unincorporated areas of the County and provides law enforcement services for several cities. The Sheriff's Office is divided into five bureaus: Headquarters Patrol Bureau, Coastside Patrol Bureau, San Carlos Police Bureau, Transit Bureau, and Millbrae Police Bureau. The Headquarters Patrol Bureau is responsible for serving the South County area. The Coastside Patrol Bureau provides law enforcement services for over 60 percent of the County and deals with all quality of life issues along the coast. The San Carlos Police Bureau provides services to the City of San Carlos. The Transit Police Bureau provides policing for all San Mateo County Transit District and Caltrain facilities throughout San Francisco, San Mateo, and Santa Clara Counties. The Millbrae Police Bureau provides law enforcement services to the City of Millbrae (San Mateo County Sheriff's Office 2018). The Sheriff's Office response time for the first half of fiscal year 2018-2019 was 5 minutes and 9 seconds, which is below the 8-minute response time goal (Tunc, Deniz 2017).

Incorporated cities, such as the City of Half Moon Bay, City of San Mateo, and San Bruno operate independent police departments, which enforce local, state, and federal laws within their city limits. The County Parks Rangers protect and supervise the County parks to ensure visitors are following the park rules; however, County of San Mateo Park Rangers are not considered law enforcement officers. The California Highway Patrol, whose jurisdiction includes state highways and roads in unincorporated areas of the County, also provides law enforcement and emergency assistance in the program area.

Fire Protection

The San Mateo County Fire Department (County Fire Department) provides fire protection, emergency medical service, fire prevention, incident mitigation, preparedness, and public education to unincorporated areas of the County (San Mateo County Fire Department 2018a). The County contracts with the California Department of Forestry and Fire Protection (CAL FIRE) for administration, support services, and personnel for unincorporated areas not served by other fire districts or departments. CAL FIRE is California's fire department and resource management agency with nearly 8,000 permanent and seasonal employees. All paid personnel of the County Fire Department are CAL FIRE employees funded by the County (San Mateo County Fire Department 2018b).

The County Fire Department has both paid and volunteer personnel and operates three volunteer fire stations and four paid stations for a total of 7 fire stations (refer to **Table 3.12-1** for a list of fire stations operated by the County). The County Fire Department responds to over 2,000 emergency incidents a year (San Mateo County Fire Department 2018a). The County Fire Department's response time goal is to provide a response time of five minutes or less to any fire occurring in rural areas 90 percent of the time (San Mateo 1986).

Table 3.12-1. San Mateo County Fire Department Fire Stations

Fire Station Number	Fire Station Address	Paid or Volunteer	Equipment/Personnel
Fire Station 17 (San Mateo Highlands)	320 Paul Scannell Dr San Mateo, CA	Paid	2 engines, 1 ladder truck, 1 bulldozer, and 12 personnel
Fire Station 18 (Cordilleras)	300 Edmonds Rd Redwood City, CA	Paid	1 engine 3 personnel
Fire Station 55 (Loma Mar)	8150 Pescadero Creed Rd Loma Mar, CA	Volunteer	1 engine 12 personnel
Fire Station 56 (Kings Mountain)	13889 Skyline Blvd Woodside, CA	Volunteer	1 engine, 1 rescue vehicle, and 1 water tender 23 personnel
Fire Station 57 (La Honda)	8945 La Honda Rd La Honda, CA	Volunteer	1 engine and 1 water tender 11 personnel
Fire Station 58 (Skylonda)	17290 Skyline Blvd Woodside, CA	Paid	3 engines 14 personnel
Fire Station 59 (Pescadero)	1200 Pescadero Rd Pescadero, CA	Paid	2 engines 12 personnel

Source: San Mateo County Fire Department 2018a and San Mateo County 1986.

Fire protection districts provide fire service to portions of unincorporated areas which are not served by the San Mateo County Fire Department/CAL FIRE. Seven fire protection districts directly serve portions of the unincorporated areas of the County. These districts

have mutual aid agreements with City fire departments allowing them to request back-up if necessary. Other incorporated cities within the County such as the Cities of Half Moon Bay, San Mateo, and San Bruno, operate independent fire departments.

Water

The County has two water service areas that provide residents and businesses in the La Honda and Pescadero communities with adequate and reliable supplies of water. DPW operates County Service Area No. 7, which supplies water to approximately 70 customers in the La Honda community. The water system also supplies two County facilities including Camp Glenwood Boys Ranch and Sam McDonald Park. The system is comprised of an intake and pump in Alpine Creek, a water treatment plant, and a storage tank and distribution system (County of San Mateo 2019a). The water system for the community of Pescadero (County Service Area No. 11) includes three wells, one 135,000-gallon distribution tank, a 140,000-gallon storage tank, and a distribution system. County Service Area No. 11 has approximately 200 residential and commercial customers (County of San Mateo 2019b). The 140,000-gallon tank and one of the groundwater wells were recently constructed in 2018 (County of San Mateo 2020).

The Parks Department receives water from multiple sources. The Parks Department operates its own water supply system in Memorial and Pescadero Creek County parks, which primarily relies on water from Pescadero Creek. The San Francisco Public Utilities Commission provides water supplies to Junipero Serra County Park and facilities at the Crystal Springs Regional Trail. Coastwide County Water provides water supplies to Quarry County Park, San Pedro Valley Park, and Fitzgerald Marine Reserve. San Bruno Mountain State and County Park receives water from various municipal water supplies. All other County parks do not have a water supply system in place.

Sewer

The County provides sewer collection services for residents and businesses within ten sewer maintenance and sanitation districts within the unincorporated areas of San Mateo County. These include sewer and sanitation districts in Burlingame Hills, a neighborhood east of Crystal Springs Reservoir, Devonshire, Edgewood, Emerald Lake Heights, Fair Oaks, Kensington Square, Oak Knoll, and Scenic Heights. Sewage received through the County's collection systems get directed to sewage treatment plants operated by the South Bayside System Authority, or the cities of Burlingame or San Mateo (County of San Mateo 2019c).

The Parks Department also provides sewer collection and wastewater treatment services to Memorial County Park. As described in Chapter 4, *Other Statutory Considerations*, Section 4.5.1, the Parks Department plans to construct a new wastewater treatment plant at this park and construction is anticipated to be complete by 2022.

Sewer collection and treatment services for all other portions of San Mateo County are provided by applicable services operated by local municipalities.

Solid Waste

Waste generated within the County is typically taken to transfer centers to be sorted and separated into material that require disposal at a landfill. In the County, there are four transfer/material recovery facilities, one anaerobic digestion facility, one active landfill, and

17 closed landfills (San Mateo County Health 2019). The transfer/materials recovery facilities are located in Pescadero, San Bruno, and South San Francisco. An anaerobic digestion facility is co-located with the transfer/materials recovery facility in South San Francisco.

The active landfill, Ox Mountain Landfill (or Corinda Los Trancos Landfill), is located in the city of Half Moon Bay and is a Class III Municipal Solid Waste Landfill. The Ox Mountain Landfill accepts all types of solid waste except hazardous waste. Ox Mountain Landfill has a maximum permitted throughput of 3,598 tons per day with a maximum permitted capacity is 60,500,000 cubic yards. As of December 2015, this landfill had a remaining capacity of 22,180,000 cubic yards. The estimated closure date for the Ox Mountain Landfill is January 2034 (CalRecylce 2019).

Telecommunications

The County is served by multiple telecommunications companies, including AT&T, Verizon, Crown Castle, Mobilitie, and others. Overhead telecommunications lines traverse portions of the County.

Electrical Power and Natural Gas

Pacific Gas and Electric Company (PG&E) provides natural gas and electricity to most of northern California and approximately 16 million people, including the program area. PG&E produces and purchases electricity from both renewable and nonrenewable resources, with power derived from fossil fuels and nuclear and hydroelectric sources. PG&E has an electricity generation portfolio that totals 7,687 megawatts (PG&E 2018). In 2017, almost 80 percent of electricity comes from resources that do not produce any greenhouse gases, including 33 percent from renewable sources (PG&E 2017).

3.12.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

No federal laws, regulations, or policies related to public services and utilities are applicable to the proposed program.

State Laws, Regulations, and Policies

California Integrated Waste Management Act

To conserve water, energy, and other natural resources and to protect the environment by reducing the incineration or landfill disposal of waste, the California Integrated Waste Management Act of 1989 requires cities and counties to reduce, reuse, and recycle (including composting) solid waste generated in the state to the maximum extent feasible. The act requires development of countywide integrated waste management plans (CIWMPs). A CIWMP must include elements that address source reduction and recycling, household hazardous waste, and non-disposal facilities for the county and each city within the county.

The California Integrated Waste Management Act is overseen by the California Department of Resources Recycling and Recovery (CalRecycle). CalRecycle is a department within the

California Environmental Protection Agency (Cal EPA) that administers and oversees the state's waste handling and recycling programs in support of the California Global Warming Solutions Act of 2006 (CalRecycle 2018).

In October 2011, Assembly Bill (AB) 341 was adopted by the California legislature which amended the California Integrated Waste Management Act by directing CalRecycle to adopt a state policy to achieve a goal of 75 percent recycling, composting or source reduction of solid waste by 2020. AB 341 focused largely on commercial waste generators because this sector was identified as the most in need of improved waste management. AB 341 is a legislative declaration of policy and does not alter the 50 percent diversion mandate (CalRecycle 2018).

California Utility Notification Requirements

Title 8 California Code of Regulations (CCR) Section 1541 requires excavators to determine the approximate locations of subsurface installations such as sewer, telephone, fuel, electricity, and water lines (or any other subsurface installations that may reasonably be encountered during excavation work) before initiating excavation activities.

California law (California Government Code Section 4216 *et seq.*) requires owners and operators of underground utilities to become members of and participate in a regional notification center, such as Underground Service Alert – Northern California (USA North). USA North receives reports of planned excavations from public and private parties and transmits the information to all participating members that may have underground facilities at the location of an excavation. USA North members mark or stake their facilities, provide information, and give clearance to dig (USA North 2018).

Local Laws, Regulations, and Policies

Applicable local plans, policies, regulations and ordinances are presented in Appendix C.

3.12.3 IMPACT ANALYSIS

Methodology

Potential impacts of the proposed program were evaluated qualitatively based on the potential for the proposed program maintenance activities to disrupt existing public services and utilities systems. These activities were identified and evaluated as temporary, short-term impacts; no long-term impacts of the proposed program on public services and utilities were identified.

Criteria for Determining Significance

Based on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines and the County's environmental checklist, the proposed program would result in a significant impact on public services and utilities if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or result in the need for new or physically altered governmental facilities, the construction of which could cause significant

environmental impacts, to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

  - Police protection
  - Fire protection
  - Other public facilities

- Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects;
- Have insufficient water supplies available to serve the proposed project and reasonably foreseeable future development during normal, dry and multiple dry years;
- Result in a determination by the wastewater treatment provider which serves or may serve the proposed project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and
- Result in incompliance with federal, state, and local management and reduction statutes and regulations related to solid waste.

Environmental Impacts

Impact PSU-1: Effects on Wastewater Treatment Demand and Water Supply (*Less than Significant*)

One of the main objectives of the proposed program is to maintain the functional integrity and operational quality of County facilities, including channels, stormwater facilities, roads, trails and other recreational facilities. The proposed program would be limited to maintaining existing County facilities and would not result in the construction of new facilities. The proposed program would not generate substantial increases in demand for wastewater treatment or water supply.

During maintenance, maintenance workers would use portable restrooms that would be off-hauled by the County or contractor for disposal. These minimal increases in wastewater generated by maintenance workers would not substantially increase the volume of wastewater in the system such that capacity of local wastewater treatment facilities in the County would be exceeded.

Similarly, some maintenance activities such as bank stabilization, culvert repair/replacement, and other road and trail maintenance activities would require a minimal amount of water for dust control purposes. This minimal amount of water used for dust control purposes would likely be supplied by a water truck and would not adversely affect local water supplies.

Applicable Best Management Practices

None applicable.

Conclusion

For the reasons described above, the proposed program would have a **less-than-significant** impact on wastewater treatment demands and water supply, and no mitigation would be required.

Impact PSU-2: Effects on Public Services, including Police, Fire, and Emergency Response Times (*Less than Significant*)

The proposed program would not involve the construction of any new facilities or involve any long-term activities that would result in increased demand for police, fire, or other public services.

To the extent feasible, two-way traffic flow would be maintained on roadways in the vicinity of the work site. However, if maintenance work requires road closures or detours, emergency response times would be impacted. In some instances, maintenance work along roadways, including culvert repair/replacement, roadway repaving and resurfacing, and slip-out and slide repairs, may require temporary closures of one or more lanes, which could lead to delays affecting emergency service providers if adequate precautions are not taken. Implementation of the BMPs described below would ensure that emergency service providers are notified of any planned lane closures and appropriate traffic control measures are implemented. Lastly, the proposed program is beneficial in further preventing and reducing the extent of additional road maintenance problems by allowing maintenance activities to occur in a timely fashion.

Applicable Best Management Practices

The County would implement the following BMPs to minimize effects on public services, including police, fire, and emergency response time. A description of each best management practice (BMP) is provided in Table 2-3 in Chapter 2, *Project Description.*

- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

Conclusion

With implementation of the above-listed BMPs, this impact would be **less than significant** and would not require mitigation**.**

Impact PSU-3: Disruption to Utilities and Service System Facilities, including Storm Drainage, Electric Power, Natural Gas, or Telecommunications Facilities (*Less Than Significant Impact*)

Buried and aboveground pipes, cables, and other utility delivery systems for stormwater, electricity, natural gas, water, sewer, and telecommunication facilities are present within the program area. Stormwater pipelines and outfalls are commonly located within or near flood control channels. Any of these utilities could potentially experience a disruption in service if the proposed program's maintenance activities accidentally damaged or interrupt the utilities' distribution or transmission systems.

Proposed maintenance activities involving grading, digging, excavation and other ground-disturbing activities related to sediment removal, bank stabilization, road slip-out repairs,

and other trail and road maintenance could potentially affect buried utilities that cross or are adjacent to County roads, trails, and channels. In addition, vegetation management activities along such County facilities and within County parks could potentially affect overhead utility lines during the removal or pruning of vegetation, particularly trees. However, implementation of BMP GEN-24 (Investigation of Utility Line Locations) would require the County to identify and notify utility services that may be affected by maintenance prior to initiating work. In addition, any disruptions to utilities and service systems would be temporary (i.e., temporary disruptions would last for as long as maintenance is conducted at the site) and service would be restored once maintenance is complete. Further, all maintenance activities would result in a beneficial effect as one of the objectives of the proposed program is to maintain the functional integrity and operational quality and capacity of County facilities and recreational facilities. In addition to BMP GEN-24, BMP GEN-2 would minimize the area of disturbance during maintenance work and thereby minimize the potential to disrupt existing utility lines.

Applicable Best Management Practices

The County would implement the following BMPs as part of the proposed program to reduce the potential impacts related to disrupting utilities and service system facilities. A description of these BMPs is provided in Table 2-3 in Chapter 2, *Project Description*.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP GEN-24: Investigation of Utility Line Locations

Conclusion

By implementing the BMPs listed above, the impact on utilities and service system facilities resulting from the proposed program would be **less than significant** and would not require mitigation.

Impact PSU-4: Exceedance of Landfill Capacity or Non-Compliance with Regulations Related to Disposal of Excavated Sediment or Debris (*Less Than Significant Impact*)

Solid waste generated by the proposed program maintenance activities would include excavated sediment from flood control facilities; vegetative debris from vegetation management activities; and deteriorated pipes, trash and debris from culvert replacement/repairs, road and trail maintenance, and other maintenance activities. As described in Chapter 2, *Project Description,* the average annual amount of sediment removed under the proposed program would be approximately 750 cubic yards (or approximately 1,010 tons) and would not exceed 1,500 cubic yards (or approximately 2,025 tons) annually. Removed sediment may be off-hauled to another County facility and stored for future use for local projects or be disposed of at an appropriate disposal facility. Removed sediment from urban watersheds would be tested to determine whether hazardous levels of contaminants are present prior to removal.

If the sediment is considered hazardous, it would not be disposed of at a Class III landfill but at a site designated to receive hazardous waste, in compliance with Mitigation Measure HAZ-1 (refer to Section 3.8, *Hazards and Hazardous Materials)*. If the sediment is not considered to be hazardous and would not be reused at another County facility, it may be

reused for agricultural or commercial purposes, or disposed of at an appropriate landfill such as the Ox Mountain Landfill. The Ox Mountain Landfill accepts approximately 3,598 tons of waste per day and has a remaining capacity of 22,180,000 cubic yards as of 2015. However, because the preferred method would be to reuse the sediment at other County facilities, it is expected that only a small portion of excavated sediment would be sent to the landfill. In addition, landfills use soil to spread over solid waste debris to contain gases and assist in the decomposition process, as long as the sediment is not classified as hazardous. Thus, there is a potential for excavated sediment associated with the program to be used at the Ox Mountain Landfill for beneficial purposes as cover material, which would not affect the landfill's remaining capacity.

Waste generated from other maintenance activities, including culvert replacement/repair and road and trail maintenance would be not be substantial. In addition, maintenance crews would also generate a nominal amount of waste associated with food, wrappers, etc. Waste generated from these activities would be disposed at the Ox Mountain Landfill and would not represent a significant portion of available landfill capacity. As such, the Ox Mountain Landfill would have sufficient capacity to serve the needs of the program. Vegetative debris generated from vegetation management activities would be disposed of at a nearby composting facility and invasive weeds removed would be disposed in accordance with BMP BIO-18 (Invasive Plant Control). In addition, reuse of excavated sediment at other County facilities and disposal of material would comply with all federal, state, and local regulations for disposal.

In conclusion, although the proposed program would not dispose of a substantial amount of material at a landfill facility, the Ox Mountain Landfill has sufficient remaining capacity to serve the needs of the program. Implementation of the BMPs listed below would minimize the areas disturbed during maintenance work and require testing prior to sediment disposal, thus, minimizing program impacts related to waste disposal.

Applicable Best Management Practices

The County would implement the following BMPs to minimize impacts related to exceeding landfill capacity and ensure compliance with regulations related to disposal. A description of these BMPs is provided in Table 2-3 in Chapter 2, *Project Description*.

- BMP GEN-2: Minimize Area of Disturbance and Site Maintenance
- BMP ST-1: Testing and Disposal of Sediment
- BMP BIO-18: Invasive Plant Control

Conclusion

With implementation of the above-listed BMPs, this impact would **less than significant** and would not require mitigation**.**

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3.13 RECREATION

This section presents an overview of recreational resources adjacent to the maintenance sites and elsewhere within the County of San Mateo Routine Maintenance Program (proposed program) area. This section also summarizes regulations and policies related to recreation and evaluates the potential impacts of the proposed program on recreational resources.

3.13.1 ENVIRONMENTAL SETTING

The program area includes several County of San Mateo (County) parks and regional trails, as shown in Figures 2-2 through 2-6. **Table 3.13-1** summarizes features and recreational opportunities available at each County park and regional trail. This table also summarizes recreational facilities that may require maintenance and other proposed routine maintenance activities. Appendix C of the Manual (Appendix A) shows the specific locations of Parks Department facilities that may require maintenance under the proposed program.

Table 3.13-1. County Parks and Trails in the Proposed Program

County Park/Trail	Community	Location on Detailed Map	Features	Facilities Requiring Maintenance & Other Maintenance Activities
San Bruno Mountain State and County Park	Brisbane/ Daly City/ South San Francisco	Figure 2-2	2,416-acre park offering 12 miles of hiking trails, sightseeing and vista points, picnic areas, and barbecue pits.	Roads (paved and unpaved) Trails Culverts Hazard trees / Fuel management Vegetation management Bridges, gates, and signage
Junipero Serra County Park	San Bruno	Figure 2-2	Includes picnic areas, two youth camp areas, trails, playground, and visitor center. Offers views of San Bruno Mountain and San Francisco Bay.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management Bridges, gates, and signage
Coyote Point Recreation Area	San Mateo	Figure 2-2	Includes a beach promenade, Bay Trail, picnic areas, marina, and a playground. Provides opportunities swimming, windsurfing, bicycling, jogging, fishing, boating and sailing.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management Low impact development (LID) maintenance Marina (sewer lines, ejector tanks, docks, water lines) Boat launch ramp Channel entrance/breakwater
Edgewood County Park and Preserve	Redwood City	Figure 2-3	467-acre park and preserve includes 10 miles of hiking trails and sightseeing opportunities. Known for its serpentine grasslands and wildflowers.	Roads (paved and unpaved) Culverts Hazard trees / fuel management Vegetation management
Flood Park	Menlo Park	Figure 2-3	21-acre park known for its large Oak and Bay trees. Includes picnic areas, softball fields, tennis courts, and opportunities for horse shoeing, volleyball, and petanque.	Paved roads Trails Hazard trees / fuel management Vegetation management

County Park/Trail	Community	Location on Detailed Map	Features	Facilities Requiring Maintenance & Other Maintenance Activities
Huddart Park	Woodside	Figure 2-3	Over 900 acres large, this park offers hiking and equestrian trails, barbecue pits, picnic areas, a playground, and grassy meadows. Known for its forested slopes and steep canyons.	Roads (paved and unpaved) Trails Culverts Bridges Hazard trees / fuel management Vegetation management
Wunderlich County Park	Woodside	Figure 2-3	Over 900 acres large, this park offers hiking and equestrian trails, historic Folger Stable, Carriage Room museum, and picnic tables. The park is largely open space consisting of redwood forest and open meadows.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Sam McDonald County Park	Loma Mar	Figures 2-5 and 2-6	850-acre park includes 3 youth campgrounds, 3 horse camp areas, trails, and picnic areas. Northern portion includes a lush growth redwood forest and the southern portion includes open ridge, grassy knolls and patchy brush areas. Offers views of Butano and Skyline ridges and Pacific Ocean.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Pescadero Creek Park	Loma Mar	Figure 2-6	Encompasses Sam McDonald, Memorial Park, and Pescadero Creek Park. Includes hiking trails, equestrian trails, and hike-in camps. Contains a significant amount of forest and watershed related resources.	Roads (paved and unpaved) Trails Culverts Bridges Hazard trees / fuel management Vegetation management
Tunitas Creek Beach	San Gregorio	Figure 2-5	Currently has no facilities but is accessible via a steep, eroded trail on the property. As of 2017, the County Parks Department and Peninsula Open Space Trust are partnering to improve this beach to provide safe access to the beach and other amenities including parking, restrooms, and possibly a ranger station.	Currently none but in the future, facilities that may require maintenance include: roads, trails, culverts, vegetation management.

County Park/Trail	Community	Location on Detailed Map	Features	Facilities Requiring Maintenance & Other Maintenance Activities
San Pedro Valley Park and Pedro Point Headlands	Pacifica	Figure 2-4	1,052-acre area offers group and family picnic areas, barbecue pits, self-guided nature trail, hiking trails, and a visitor center.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Quarry County Park	El Granada	Figure 2-4	517-acre park offers a play area, picnic tables, barbecue pits, community garden, tree house, open grassy areas, vista point trail, restrooms and parking area. The Wicklow property (478 acres) was added in 2014 and includes trails, grassy hillsides, coastal ridges, eucalyptus and pine and cypress groves.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
James V. Fitzgerald Marine Reserve	Moss Beach	Figure 2-4	Reserve includes tidepools, beach, picnic areas, restroom facilities, trails, and nature interpretation signage. Trails along bluff offer views of the Pacific Ocean. The tide pools are popular among school and community groups for educational purposes.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management LID maintenance
Pillar Point Bluffs	Moss Beach	Figure 2-4	220-acre bluff includes a section of the California Coastal Trail, which offers scenic views of the Pacific Ocean and Half Moon Bay Harbor for joggers, hikers, and bicyclists. Also offers views of the famous Mavericks surf break.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Memorial Park	Loma Mar	Figure 2-6	673-acre park includes picnic facilities, a nature center, two family campgrounds (158 sites total), trails, amphitheater, a camp store. Known for its views of the old-growth redwood trees.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management

County Park/Trail	Community	Location on Detailed Map	Features	Facilities Requiring Maintenance & Other Maintenance Activities
Sanchez Adobe County Park	Pacifica	Figure 2-4	Located on a 5-acre parcel back in the San Pedro Valley, this park includes a restored adobe residence from the mid-1800's and contains archaeological evidence of the Mission Dolores Outpost. Special educational programs such as Rancho Day are held here to educate students about the past.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Pigeon Point County Park	South of Pescadero	Figure 2-6	Open space bluff providing scenic views of the Pacific Ocean and Pigeon Point Light Station State Historic Park. Includes a road pullout off of Highway 1.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Mirada Surf East County Park	Half Moon Bay	Figure 2-5	34-acre property is located directly across from Mirada Surf West (across Highway 1). Includes protected open space, a trail leading to Quarry Park.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Mirada Surf West County Park	El Granada	Figure 2-5	15-acre coastal bluff including a portion of the California Coastal Trail that offers views of the Pacific Ocean and Half Moon Bay, and access to the beach.	Roads (paved and unpaved) Trails Culverts Hazard trees / fuel management Vegetation management
Crystal Springs Regional Trail	San Mateo	Figure 2-2	15.3 miles of paved trail that parallels the eastern side of San Andreas, Upper and Lower Crystal Springs reservoirs. Approximately 2.2 miles of trail remain to be constructed. Trail is popular amongst walkers, joggers, bicyclists, and equestrians. Trail includes restrooms, benches, and picnic tables.	Paved roads/trails Culverts Hazard trees/ fuel management Vegetation management

County Park/Trail	Community	Location on Detailed Map	Features	Facilities Requiring Maintenance & Other Maintenance Activities
Alpine Trail	Ladera	Figure 2-3	7.6-mile paved trail beginning at Santa Cruz Avenue/Alpine Road/Junipero Serra Boulevard intersection in Menlo Park that skirts around the Stanford Golf Course, traverses through a small settlement known as Stanford Weekend Acres, crosses San Francisquito Creek, and then follows Alpine Road through the Ladera community, ending at the road's intersection with Portola Road.	Roads (paved and unpaved) Culverts Hazard trees/ fuel management Vegetation management
Devil's Slide Trail	Pacifica	Figure 2-4	A 1.3-mile multi-use paved trail converted from a former segment of Highway 1 and serves as a segment of the California Coastal Trail. Provides hikers, joggers, bicyclists and equestrians access to the rocky heights above the Pacific Ocean. Other amenities include benches, interpretive signs, restrooms, drinking fountains and bike racks.	Roads (paved and unpaved) Culverts Hazard trees/ fuel management Vegetation management

Source: County of San Mateo 2019

3.13.2 REGULATORY SETTING

No federal laws or regulations apply to recreational resources within the proposed program area.

State Laws, Regulations, and Policies

California Coastal Act

As described in Section 3.10, *Land Use and Planning,* the California Coastal Act of 1976 (Coastal Act) requires new development (e.g., buildings, roads, pipe, and utility lines) that occur within the Coastal Zone to obtain a Coastal Development Permit from either the California Coastal Commission or the local government. In partnership with coastal cities and counties, the California Coastal Commission plans and regulates the use of land and water in the Coastal Zone. The Coastal Act includes the following policies that are relevant to protection of recreational uses:

Section 30210. Access; recreational opportunities; posting. In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211. Development not to interfere with access. Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30221. Oceanfront land; protection for recreational use and development. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.

Refer to Section 3.10 for additional information regarding the coastal development permit process that the County would need to comply with.

Regional Laws, Regulations, and Policies

San Francisco Bay Conservation and Development Commission's San Francisco Bay Plan

The San Francisco Bay Conservation and Development Commission's (BCDC's) San Francisco Bay Plan (Bay Plan) includes findings and policies pertinent to public access and recreation around the Bay. Bay Plan policies relevant to recreational uses in the Bayside portion of the program area include the following:

Recreation Policy 1. Diverse and accessible water-oriented recreational facilities, such as marinas, launch ramps, beaches, and fishing piers, should be provided to meet the needs of a growing and diversifying population, and should be well distributed around the Bay and

improved to accommodate a broad range of water-oriented recreational activities for people of all races, cultures, ages and income levels. Periodic assessments of water-oriented recreational needs that forecast demand into the future and reflect changing recreational preferences should be made to ensure that sufficient, appropriate water-oriented recreational facilities are provided around the Bay. Because there is no practical estimate of the acreage needed on the shoreline of the Bay, waterfront parks should be provided wherever possible.

Public Access Policy 9. Access to and along the waterfront should be provided by walkways, trails, or other appropriate means and connect to the nearest public thoroughfare where convenient parking or public transportation may be available. Diverse and interesting public access experiences should be provided which would encourage users to remain in the designated access areas to avoid or minimize potential adverse effects on wildlife and their habitat.

Local Laws, Regulations, and Policies

Please refer to Appendix C for applicable goals and policies in General Plans for jurisdictions where maintenance activities may occur within San Mateo County.

3.13.3 IMPACT ANALYSIS

Methodology

This section describes the proposed program's potential impacts on recreation. Impacts were evaluated qualitatively, based on the potential for the proposed program to disrupt access to and use of existing recreational facilities. Generally, construction activities may result in a short-term loss of recreational opportunities by disrupting use of or access to recreation areas or facilities. A long-term effect could occur if a recreational opportunity was eliminated as a result of long-term maintenance activities.

Secondary effects on recreational opportunities due to temporary disturbances associated with proposed maintenance activities (e.g., construction noise, dust and air pollutant emissions, and traffic) are described in other sections of this draft environmental impact report (DEIR). Please refer to Section 3.11, *Noise,* for discussion of the proposed program's construction noise effects; Section 3.3, *Air Quality,* for discussion of the program's emissions of air pollutants, and Section 3.14, *Traffic*, for discussion of the program's temporary effects on traffic flow.

Criteria for Determining Significance

Based on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines and the County's environmental checklist, the proposed program would result in a significant impact on recreation if it would:

- 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; or

- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

In addition, for the purposes of this analysis, the proposed program would result in a significant impact on recreational resources if it would:

- Result in the loss of available public recreational opportunities.

The proposed program involves maintenance of existing facilities in County parks including paved and unpaved trails, campgrounds, picnic areas, existing rock slope protection, culverts and other storm drainage facilities, bridges, low impact development (LID) and green infrastructure (GI) features, and a marina at Coyote Point. The proposed program also includes maintenance along County roads that provide access to other non-County parks (e.g. Butano State Park, Portola State Park). The environmental effects of these activities and associated mitigation measures are described throughout this DEIR in Sections 3.1 through 3.12, and Sections 3.14 through 3.16. As such, no further discussion for the second criterion is provided herein.

Environmental Impacts

Impact REC-1: Increased Use of Recreational Facilities such that Substantial Deterioration Would Occur (*Less than Significant*)

The proposed program would involve maintenance of existing facilities within County parks, County maintained roads, and channels. The proposed program also includes maintenance of the marina at Coyote Point and regional trails including Crystal Springs Regional Trail, Devil's Slide Trail, and Alpine Trail. Some maintenance activities in County Parks, particularly those involving trails and roads would require temporary closure of these facilities. Proposed maintenance activities would be temporary at any given location. For example, vegetation trimming or mowing in a given area would generally be limited to one day. Depending on the site and extent of required maintenance work, sediment removal, bank stabilization, slip-out repair, and trail maintenance (e.g., tread repair or construction of rolling dips) activities could require temporary closure of recreational facilities such as trails, picnic areas, campgrounds, or parking areas, for the duration of the maintenance activities. Such closures may last anywhere from less than a day to up to two weeks (in limited instances). While it is possible that these temporary closures could temporarily increase use of other recreational facilities near a given maintenance work area, due to the number of County parks and other recreational facilities in incorporated areas of San Mateo County, the proposed program would not substantially increase the demand of other recreational facilities such that substantial deterioration would occur.

Applicable Best Management Practices

None required.

Conclusion

For the reasons described above, this impact would be **less than significant** and no mitigation would be required.

Impact REC-2: Temporary Disruption of the Use, or Access of Recreational Facilities (*Less than Significant*)

As described in Table 3.13-1, there are a number of trails, picnic areas, campground areas, and other recreational facilities throughout the County's parks and regional trails. In addition, while the majority of DPW's maintenance activities occur along County maintained roads, some of these roads may be used by recreationists such as bicyclists, depending on their location. Recreational users of trails, roads, and other recreational facilities could experience temporary disruption during active maintenance activities.

As described in Impact REC-1, when maintenance activities take place within County parks, portions of trails, picnic areas, campgrounds or parking areas may have to be temporarily closed for the duration of the maintenance activity. Temporary facility closures may last from less than a day to up to several weeks to maximize public safety while they are used as access corridors or staging areas for vehicles, supplies, and equipment. Vegetation management, such as mowing, grazing and trimming, may require temporary closure of trails in the vicinity of work areas. Trail and road maintenance activities such as tread repair or re-paving may require a few days to a couple weeks. Culvert replacement activities along trails may require up to three weeks. Depending on the activity and extent of the work area, such closures could temporarily impede recreational use. However, such closures would be localized to a specific maintenance site, and alternative recreational opportunities throughout County parks and other parks in incorporated areas of San Mateo County would continue to be available. The public would also be notified about any construction activities occurring within County parks through implementation of BMP GEN-18 (Traffic Control and Public Safety). Once proposed activities are completed, conditions of the Parks Department's trails, roads, bridges, and other amenities would improve.

Applicable Best Management Practices

The County would implement the following best management practices (BMP) to address any temporary disruptions and would ensure the public is notified of maintenance activities at County parks and trails. A description of this BMP is provided in Table 2-3 in Chapter 2.

- BMP GEN-18 (Traffic Control and Public Safety)

Conclusion

The proposed program would provide placement of warning signs, barriers, and detours so that temporary access disruption or safety hazards along public roads caused by maintenance activities would be minimized. This impact would be **less than significant** and no mitigation would be required.

3.14 TRANSPORTATION AND TRAFFIC

This section summarizes the environmental and regulatory setting related to transportation and traffic in the context of the County of San Mateo Routine Maintenance Program (proposed program). This section also presents the impact methodology and evaluates the potential traffic impacts associated with the proposed program.

3.14.1 ENVIRONMENTAL SETTING

Regional Access

Regional access to the program area is available via U.S. Highway 101 (U.S. 101), Interstate (I-)280, I-380, State Route (SR) 1, SR 35 (Skyline Boulevard [Blvd]), SR 82, SR 84, SR 92, SR 109, and SR 114, all of which are part of the California State Highway System, with the exception of U.S. 101. SR 1, SR 35, SR 82, U.S. 101, and I-280 extend from the San Francisco County line in the north to the Santa Clara County line in the south. SR 84 and SR 92 extend east/west from San Francisco Bay to (SR 1 near) the Pacific Ocean. These roadways, in addition to I-380, also connect two (or more) major north/south routes. (City/County Association of Governments of San Mateo County [C/CAG] 2018)

Local Roadway Network

Access to the program area, including a number of County of San Mateo (County) open space parks, is also provided through a number of major local roads, including Hillside Boulevard (Blvd), Bayshore Blvd, Guadalupe Canyon Parkway, Westborough/Sharp Park Blvd, San Bruno Avenue (Ave), Sneath Lane (Ln), Crystal Springs Road (Rd), Cañada Rd, Sand Hill/Portola Rd, Alpine Rd, and Pescadero Creek Rd. Hillside Blvd, Bayshore Blvd and Guadalupe Canyon Parkway follow the perimeter of San Bruno Mountain State and County Park, through Daly City and the cities of Brisbane, Colma and South San Francisco. Westborough/Sharp Park Blvd begins at Hillside Blvd on the south end of San Bruno Mountain State and County Park, and runs southwest until it meets Highway 1 at Sharp Park in the City of Pacifica. San Bruno Ave and Sneath Ln run between SR 82 and SR 35, east of Sweeny Ridge and San Andreas Lake, while Crystal Springs Rd also runs between the two highways further south, terminating at Lower Crystal Springs Reservoir. Cañada Rd runs north-south from the Upper Crystal Springs Reservoir until it meets SR 84 in the City of Woodside. Sand Hill/Portola Rd and a segment of Alpine Rd run the perimeter of unincorporated County land including a portion of the San Franciscquito Creek watershed near Portola Valley and the Santa Clara County line. The remaining segment of Alpine Rd extends southwest until it joins Pescadero Creek Rd, which terminates at Highway 1 at the Pacific Ocean near the community of Pescadero.

Public Transit

There are a number of public transit operators in the proposed program vicinity. SamTrans operates 76 bus routes throughout San Mateo County and portions of San Francisco and Palo Alto. It also provides paratransit services through Redi-Wheels on the Bayside of San

Mateo County and RediCoast on the side of San Mateo County draining to the Pacific Ocean (Coastside). Bay Area Rapid Transit (BART) serves the northern side of San Mateo County draining to the San Francisco Bay (Bayside), with stations in Daly City, Colma, South San Francisco, San Bruno, San Francisco Airport, and ultimately terminating in Millbrae. Caltrain (a commuter railroad operating between San Francisco and San Jose), which is operated by the Peninsula Corridor Joint Powers Board, serves the Bayside of San Mateo County, with thirteen stations from South San Francisco to Menlo Park.

Pedestrian, Bicycle, and Equestrian Access

As discussed in Section 3.13, *Recreation,* public recreational access for pedestrians and bicyclists is available throughout San Mateo County, including San Bruno Mountain State and County Park, San Pedro Valley Park, Pescadero Creek Park, and Pillar Point Bluff, among others. Equestrian access is also available at several parks, including Wunderlich Park and Huddart Park. Additionally, numerous city and state parks, open space preserves, and wildlife refuges are available for public access throughout San Mateo County. Within the proposed program area, numerous local roads have bike lanes/bikeways. The northern portion of San Mateo County has a mix of Class 1, 2 and 3 bikeways[1], primarily located in Daly City and South San Francisco. The mid-peninsula area has a mix of mostly Class 2 and 3 bikeways, concentrated in Burlingame, San Mateo, Redwood City, and Foster City (the latter of which contains Class 1 facilities). The southern portion of San Mateo County has a mix of Class 1 and 2 facilities throughout Menlo Park, Menlo Oaks and East Palo Alto.

3.14.2 REGULATORY SETTING

Federal Regulations

The only road in San Mateo County within the Federal Highway System is U.S. Highway 101 (U.S. 101). Improvements on U.S. 101 must meet federal highway standards and are subject to the National Environmental Policy Act. The Federal Highway Administration (FHWA) oversees construction and maintenance activities on highways within the Federal Highway System.

State Laws, Regulations, and Policies

California Streets and Highways Code

The California Streets and Highways Code provides the standards for administering the statewide system of streets and highways. Designated state route and interstate highway

[1] Bikeways are generally classified as follows (Caltrans 2017):

- **Class 1** bikeways, also known as bike paths or shared use paths, are facilities with exclusive right of way for bicyclists and pedestrians, away from the roadway and with cross flows by motor traffic minimized.
- **Class 2** bikeways are bike lanes established along streets and are defined by pavement striping and signage to delineate a portion of a roadway for bicycle travel.
- **Class 3** bikeways, or bike routes, designate a preferred route for bicyclists on streets shared with motor traffic not served by dedicated bikeways to provide continuity to the bikeway network.
- **Class 4** separated bikeways, often referred to as cycle tracks or protected bike lanes, are for the exclusive use of bicycles, physically separated from motor traffic with a vertical feature.

facilities are under the jurisdiction of California Department of Transportation (Caltrans), except where facility management has been delegated to the county transportation authority.

According to Section 660 of the California Streets and Highways Code, an encroachment permit must be obtained for all proposed activities related to the placement of encroachments within, under, or over the State highway rights of way. Examples of the type of work that may require an encroachment permit include utilities, excavations, vegetation planting or trimming, and surveys. (Caltrans 2018a).

California Vehicle Code

Caltrans has discretionary authority with respect to highways under its jurisdiction and may issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code (Caltrans 2018b).

Local Laws, Regulations, and Policies

Please refer to Appendix C for applicable goals and policies in General Plans for jurisdictions where maintenance activities may occur within San Mateo County. The following subsections describe regional countywide congestion management and transportation plans that are relevant to the proposed program.

San Mateo County Congestion Management Program

The City/County Association of Governments of San Mateo County (C/CAG) is required to prepare and adopt a Congestion Management Program (CMP) on a biennial basis. The purpose of the CMP is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. The CMP is required to be consistent with the Metropolitan Transportation Commission (MTC) planning process that includes regional goals, policies, and projects for the Regional Transportation Improvement Program (RTIP). (C/CAG 2018)

San Mateo County Transportation Plans

CONNECT THE COASTSIDE

The County is in the process of developing a Comprehensive Transportation Management Plan, also known as "Connect the Coastside". This plan will identify programs and improvements along Highway 1 and Highway 92 to accommodate the Midcoast's future transportation needs. The plan will involve conducting a land use buildout analysis and assessment of the current and future transportation needs based on existing and future residential development potential of the Midcoast and City of Half Moon Bay. (County of San Mateo 2019a)

HIGHWAY 1 SAFETY AND MOBILITY STUDY

In coordination with Caltrans, the Local Government Commission, and other County departments, the County led a community-based planning study focused on short and long-term transportation improvements along the Midcoast portion of Highway 1. The plan includes a series of transportation improvements along Highway 1 corridor including

pedestrian crossings, raised medians, and left turn lanes to improve vehicular, pedestrian and bicycle mobility. Phase 1 of the study, which focuses on Miramar, El Granada and Princeton, was adopted by the County Board of Supervisors in 2009. Phase 2, which focuses on Moss Beach and Montara, was approved in 2012. (County of San Mateo 2019a)

ACTIVE TRANSPORTATION PLAN

The County's Office of Sustainability is currently preparing an Active Transportation Plan that will help define priorities for pedestrian and bicycle projects, improvements, and programs that encourage more walking and biking in San Mateo County. This plan is intended to provide planners, engineers, advocates and policymakers the tools needed to construct safe, comfortable, and convenient facilities for walking and biking throughout unincorporated San Mateo County. (County of San Mateo 2019b)

SUSTAINABLE STREETS MASTER PLAN

C/CAG is in the process of developing a countywide Sustainable Streets Master Plan using grant funds from Caltrans. The plan aims to identify and prioritize street improvements for adding green infrastructure (GI) to provide water quality, flood reduction, and community benefits throughout San Mateo County in the context of climate change. The goals of the project include identifying how climate change will affect future rainfall, planning to sustainably capture and clean runoff in County roadways, using nature-based solutions, while providing safer and more resilient streets for all users including motorists, bicyclists and pedestrians. The Master Plan is anticipated to include high resolution drainage mapping, include project concepts to aid in pursuing implementation, and include a tracking tool to view progress over time. (C/CAG 2019)

3.14.3 IMPACT ANALYSIS

Methodology

Traffic impacts associated with implementation of the proposed program were identified by evaluating proposed maintenance activities in the context of local and regional circulation patterns; impacts to existing roadway configurations; impacts associated with lane closures and local traffic operation requirements during maintenance activities; and relevance to standard traffic control plan requirements and strategies. The criteria for determining the significance of potential impacts are outlined below.

Criteria for Determining Significance

Based on Appendix G of the State California Environmental Quality Act (CEQA) Guidelines, the proposed program would result in a significant impact on transportation or traffic if it would:

- Conflict with a program applicable plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b):

  (b) Criteria for Analyzing Transportation Impacts.

1. *Land Use Projects*. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.
2. *Transportation Projects*. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.
3. *Qualitative Analysis.* If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
4. *Methodology*. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled, and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- Result in inadequate emergency access.

With respect to the second bullet above regarding compliance with CEQA Guidelines Section 15064.3, a qualitative analysis was conducted to estimate the proposed program's vehicle miles traveled. This approach was determined appropriate given that the program would primarily result in construction traffic effects.

Environmental Impacts

Impact TRA-1: Conflict with a Program Applicable Plan, ordinance, or Policy Addressing the Circulation System, Including Transit, Roadway, Bicycle and Pedestrian Facilities (*Less than Significant*)

Proposed program activities would generate some worker and maintenance vehicle trips, and, for activities within County roadways (e.g., repaving, slip-out/slide repairs, some culvert repair/replacements and bank stabilization), could require temporary closure of

one or more lane of traffic. Program activities also could require temporary re-routing of bicycle lanes and/or partial closure of sidewalks in the public right-of-way, as well as temporary closure of trails and other pedestrian facilities located in County parks or open spaces.

As described in Chapter 2, *Project Description,* County maintenance activities typically involve a 4-8-person crew. For vegetation management activities, the crew size is typically limited to 4 personnel but larger maintenance projects (e.g., bank stabilization, slip-out/slide repairs, culvert replacement, bridge maintenance), up to 8 personnel may be required. In a given year, it is anticipated that the County may conduct the following number of maintenance projects:

- Up to 28 culvert replacements
- 3 major bridge repair project involving erosion protection at the abutments
- 1 minor Department of Public Works (DPW) bridge maintenance project
- 4 minor Parks Department bridge maintenance projects
- 5-10 sediment removal projects at creek locations
- 7 bank stabilization/slip-out or slide repairs
- 25 unpaved road/trail maintenance projects
- 1 in-kind rock slope protection maintenance project at Coyote Point Marina
- Other maintenance at Coyote Point Marina

In addition, between DPW and the Parks Department, the County would conduct mowing activities for roughly 90 days per year, resurfacing of paved roads for about 128 days per year, paved road reconstruction for about 15 days per year, and roadside ditch/swale/green infrastructure (GI) maintenance activities over 66 days per year. Although it may vary from year to year, County maintenance activities may generate up to 2,239 haul truck trips annually. Most of these estimated haul truck trips are associated with paved road maintenance and bank stabilization and represent a conservative estimate, assuming a busy work year for the County. Many of these activities (e.g., mowing and road and bridge maintenance) do not represent a substantial increased in effort relative to past levels of maintenance conducted by the County.

During the peak maintenance season, the work crew at any one site may consist of up to 10 workers. It is also possible that 3-4 maintenance projects could overlap in duration during the peak maintenance season, resulting in approximately 20-30 workers driving to and from maintenance sites. Even if each worker drove independently to the work site, these vehicle trips would have a negligible impact on the local circulation system and would not substantially affect level-of-service or any other performance metric. The proposed program would not involve construction of any housing or new retail or commercial uses and would not generate any new long-term vehicle trips. As many of the County's proposed maintenance activities are on-going and currently occur under baseline conditions, the additional periodic trips generated under the proposed program would be similar to

existing conditions but may be somewhat greater in the first 1-3 years of the proposed program. Proposed maintenance activities may be slightly greater in the first 1-3 years of the proposed program relative to existing conditions due to the deferral of maintenance activities while authorizations were obtained.

More specifically, trips associated with paved road maintenance, vegetation management, trail maintenance, marina maintenance, and roadside ditch and GI maintenance would be the same as baseline conditions. The increase of trips during the first 1-3 years of the proposed program would mainly be associated with the County conducting deferred maintenance activities such as culvert repair/replacement activities, bank stabilization/slip-out slide repairs, sediment removal and bridge maintenance activities.

A number of proposed activities, such as culvert repair/replacement, sediment debris and removal, vegetation management, road repaving, bank stabilization, and slip-out and slide repairs, could require temporary lane closures, which could lead to delays and/or traffic hazards if adequate precautions are not taken. Implementation of the best management practices (BMPs) described below would ensure that vehicle flow and emergency access is maintained during construction. These BMPs also would prevent potential impacts from use of heavy equipment and haul trucks on local roadways and minimize impacts to pedestrian and bicycle traffic and public transit.

Applicable Best Management Practices

To ensure overall public safety and minimize impacts on pedestrians, bicyclists, motorists, and local transit routes, the County would implement the following BMPs. A description of each BMP is provided in Table 2-3 in Chapter 2, *Project Description*:

- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

CONCLUSION

With implementation of the above-listed BMPs, this impact would be **less than significant**.

Impact TRA-2: Result in Increased Vehicle Miles Traveled (*Less than Significant*)

As described under Impact TRA-1 above, the proposed program would generate a similar number of vehicle trips, though additional vehicle trips (relative to existing conditions) are anticipated during the first 1-3 years of the proposed program due to the initiation of maintenance of activities that had been deferred. . Many of the proposed maintenance activities would occur at a similar level of frequency as baseline conditions (e.g., vegetation management, paved road maintenance, roadside ditch and GI maintenance, marina maintenance). Based on the air quality modeling effort completed in CalEEMod, the proposed program would generate 189,760 vehicle miles traveled (VMT), most of which would be due to paved road maintenance activities. Because paved road maintenance activities would occur at a similar level as under baseline conditions, the proposed program would not result in a substantial increase in VMT. VMT from maintenance workers traveling to and from work sites, and related activities, would be similar to existing conditions.

Applicable Best Management Practices

No applicable BMPs.

CONCLUSION

This impact would be **less than significant**. No mitigation is required.

Impact TRA-3: Substantially Increase Hazards due to a Geometric Design Feature or Incompatible Uses (*Less than Significant*)

Proposed program activities would not substantially change the design of any roadway or intersection. Rather, the County would repair potentially dangerous roadway and trail conditions, such as slip-outs and slides and potholes. Managing vegetation along roads would also be conducted for the purpose of maintaining site distances for motorists and thereby minimize potentially hazardous conditions for motorists. During construction, maintenance activities within the roadway could pose hazards to other motorists if adequate precautions are not taken. Some larger maintenance activities (e.g. bridge maintenance, slip-out/slide repairs, creek bank stabilization, sediment removal) may require temporary closure of one or more lanes of traffic, and heavy construction equipment operated around work sites would be incompatible with other vehicles on local roads. Implementation of the BMPs listed below would minimize potential for proposed program activities to result in adverse impacts regarding increased roadway hazards.

Applicable Best Management Practices

The County would implement the following BMPs. A description of each BMP is provided in Table 2-3 in Chapter 2:

- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

CONCLUSION

With implementation of the above-listed BMPs, this impact would be **less than significant**.

Impact TRA-4: Result in Inadequate Emergency Access (*Less than Significant*)

The proposed program would not include any activities that would permanently block or constrain publicly accessible roadways or emergency access routes. Some maintenance activities such as culvert repair/replacement, bridge maintenance, road repaving, and slip-out and slide repairs could require temporary closure of one or more lanes of traffic. Slip-out and slide repair would alleviate conditions that could block emergency access. Implementation of the BMPs listed below would minimize potential for maintenance activities to adversely affect emergency access, and would require that the County notify emergency service providers in the event of any temporary lane or road closures.

Applicable Best Management Practices

The County would implement the following BMPs. A description of each BMP is provided in Table 2-3 in Chapter 2:

- BMP GEN-17: Maintain Traffic Flow

- BMP GEN-18: Traffic Control and Public Safety

CONCLUSION

With implementation of the above-listed BMPs, this impact regarding emergency access would be less than significant. In fact, fuel and vegetation management activities conducted along County roads and trails would have a beneficial effect by ensuring that emergency vehicle access is maintained along these facilities. In conclusion, this impact would be **less than significant**.

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3.15 TRIBAL CULTURAL RESOURCES

This section summarizes the environmental and regulatory setting related to tribal cultural resources (TCRs) in the context of the County of San Mateo Routine Maintenance Program (proposed program). This section also presents the impact methodology and evaluates the potential impacts on TCRs associated with the proposed program.

3.15.1 ENVIRONMENTAL SETTING

San Mateo County is within the traditional ancestral territory of the Ohlone Costanoan peoples. Information about the Ohlone Costanoan is presented in Section 3.5, *Cultural Resources*.

3.15.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

Federal law does not address TCRs, as these resources are defined in the California Public Resources Code (PCR). However, similar resources, called tribal cultural properties (TCPs), fall under the purview of Section 106 of the National Historic Preservation Act (NHPA), which is referenced in Section 3.5, *Cultural Resources*. TCPs are locations of cultural value that are historic properties. A place of cultural value is eligible as a TCP "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1990, rev. 1998). A TCP must be a tangible property, meaning that it must be a place with a referenced location, and it must have been continually a part of the community's cultural practices and beliefs for the past 50 years or more. Unlike TCRs, TCPs can be associated with communities other than Native American tribes, although the resources are usually associated with tribes. By definition, TCPs are historic properties; that is, they meet the eligibility criteria as a historic property for listing in the NRHP. Therefore, as historic properties, TCPs must be treated according to the implementing regulations found under Title 36 Code of Federal Regulations (CFR) Section 800, as amended in 2001.

State Laws, Regulations, and Policies

Assembly Bill (AB) 52, which was approved in September 2014 and which went into effect on January 1, 2015, requires that state lead agencies consult with any California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if requested by the tribe. The bill, chaptered in Pub. Res. Code Section 21084.2, also specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in Pub. Res. Code Section 21074(a), TCRs are:

(1) Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources; or

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under Pub. Res. Code Section 21074 as follows:

(b) A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2 under Pub. Res. Code, or according to Section 21084.3. Section 21084.3 identifies mitigation measures than include avoidance and preservation of TCRs and treating TRCs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

Local Laws, Regulations, and Policies

Applicable local plans, policies, and regulations pertaining to TCRs are presented in Appendix C.

3.15.3 IMPACT ANALYSIS

Methodology

As discussed in Section 3.5, *Cultural Resources*, the proposed program is in the traditional ancestral territory of the Ohlone. As discussed in Section 3.15.2 under "State Laws, Regulations and Policies," the lead California Environmental Quality Act (CEQA) agency (i.e., the County) is required to notify Native American tribes with a traditional and cultural affiliation with the Program area about a proposed project, which is preparation of the Routine Maintenance Program Manual (Appendix A), pursuant to PRC Section 21080.3.1. The County has not received any requests from tribes for project notifications under PRC Section 21080.3.1(b)(1). However, in the spirit of Assembly Bill 52, the County contacted the Native American Heritage Commission (NAHC) on December 21, 2018, for a list of tribes with a

traditional and cultural affiliation with San Mateo County, as well as for a search of the sacred lands files. The NAHC responded on December 27, 2018, noting that sacred sites have been recorded within the vicinity of the proposed program. They also provided a list of four tribes affiliated with the County, and requested that the tribes be contacted for additional information about important cultural sites. Subsequently, the County sent project notification letters on January 4, 2019, via certified return receipt, to all of the tribes listed by the NAHC (**Table 3.15-1**). All correspondence between the County, the NAHC, and notified tribes is provided in Appendix I of the Routine Maintenance Manual (Appendix A of this draft environmental impact report [DEIR]). To date, there has been no response from any of the tribes contacted.

Table 3.15-1. Native American Consultation

Organization/Tribe	Name of Contact	Letter Date	Letter Receipt	Comments
Amah Mutsun Tribal Band	Valentin Lopez, Chairperson	January 4, 2019	January 10, 2019	No response within 30 days.
Amah Mutsun Tribal Band of Mission San Juan Bautista	Irenne Zwierlein, Chairperson	January 4, 2019	January 7, 2019	No response within 30 days.
Costanoan Rumsen Carmel Tribe	Tony Cerda, Chairperson	January 4, 2019	Returned February 5, 2019.	Email sent to Chairperson Cerda from Horizon on February 5, 2019. Included copy of original letter. No response within 30 days.
Indian Canyon Mutsun Band of Costanoan	Ann Marie Sayers, Chairperson	January 4, 2019	January 11, 2019	No response within 30 days.
Muwekma Ohlone Indian Tribe of the San Francisco Bay Area	Charlene Nijmeh Chairperson	January 4, 2019	January 7, 2019	No response within 30 days.
Ohlone Indian Tribe	Andrew Galvin	January 4, 2019	January 11, 2019	No response within 30 days.

Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines, the proposed program would result in a significant impact on tribal cultural resources if it would:

- Cause a substantial adverse change in the significance of a TCR, defined in Pub. Res. Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Pub. Res. Code Section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Pub. Res. Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Pub. Res. Code Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Environmental Impacts

Impact TCR-1: Cause a substantial adverse change in the significance of a TCR, as defined in Pub. Res. Code Section 21074 or determined to be significant by the lead agency (*Less than Significant*)

No TCRs have been identified within the program area; however, continued consultation with tribes with a traditional and cultural affiliation with the region may reveal the presence of TCRs.

Chapter 2, *Project Description,* describes the various kinds of activities that would be conducted under the proposed program. Some of the actions could require ground work that has the potential to modify previously undisturbed ground. For example, culvert repair or replacement could require trenching; creek bank stabilization may include an engineered solution that modifies the existing stream bank; slides occurring on dirt roads might necessitate re-contouring of the cut slope; and trail maintenance or repair could involve constructing new rolling dips or even trail relocation. Such activities, if they disturb original ground, have the potential to impact archaeological resources that are also considered TCRs. Other actions, particularly those involving vegetation management, could impact TCRs that are part of the natural landscape, including willow, redbud, or oak groves. Though not reported, at present, it is possible that some willow stands or redbud groves have been tended for basket-making materials, or certain oak groves have been the source of acorns by Native American families for generations. Removal of these plant communities, if identified as TCRs, would be considered a significant impact.

Applicable Best Management Practices

The County would implement the following best management practices (BMPs), which include consultation with Native American tribes, prior to conducting any work that could potentially impact TCRs. A description of each BMP is provided in Table 2-4 in Chapter 2:

- BMP CUL-1: Review Cultural Resources Sensitivity Map Data and County Baseline Maps to Determine if the Work Area Has Been Subject to a Previous Cultural Resource Study
- BMP CUL-2: Record Search and Field Inventory for Highly or Moderately Sensitive Areas (Sensitivity Ratings 3-5), and Areas of Unknown Sensitivity
- BMP CUL-4: Construction Monitoring
- BMP CUL-5: Conduct Pre-Maintenance Educational Training

- BMP CUL-6: Address Discovery of Cultural Remains or Historic or Paleontological Artifacts Appropriately

Conclusion

With implementation of the above-listed BMPs, the impact to TCRs would be **less than significant**.

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3.16 WILDFIRE

This section summarizes the environmental and regulatory setting related to wildfire in the context of the County of San Mateo Routine Maintenance Program (proposed program). This section also presents the impact methodology and evaluates the potential wildfire impacts associated with the proposed program.

3.16.1 ENVIRONMENTAL SETTING

As described in Chapter 2, *Project Description,* the program area generally consists of two physiographic regions which are divided by the crest of the Santa Cruz Mountains. The Bayside of the program area (San Mateo County [County] areas draining to the San Francisco Bay) is highly urbanized, whereas the Coastside (County areas draining to the Pacific Ocean) is largely undeveloped and comprised of a combination of mountainous areas, coastal beaches, parklands and rural land uses. Due to a mix of topography, land use,, and the presence of densely forested areas and grasslands, areas to the west of State Route 35 is generally more susceptible to wildfire than the Bayside, especially the areas near Shelter Cove, Moss Beach, Half Moon Bay, and Sky Londa (County of San Mateo County 2016). To the east of State Route 35, forested lands such as those surrounding Crystal Springs Reservoir, are also susceptible to wildfire. The southern half of the County is rated as moderate or high for wildfire risk, with some very high sections located in La Honda (County of San Mateo 2016).

Fire hazards present a considerable risk to vegetation and wildlife habitats throughout the County. Additionally, the potential for significant damage to life and property exists in areas designated as wildland-urban interface areas, where development is adjacent to densely vegetated areas. Approximately 5.8 percent of the County's population lives in a wildfire risk area, though residents working or recreating in parks or opens spaces may also be exposed to wildfire risk (County of San Mateo 2016). One of the primary goals of the proposed program is to reduce overall fire risk through vegetation management at County parks and other County maintained lands. In this way, the activities and goals of the proposed program seek to reduce the potential effects of wildfire.

Ecosystems throughout the County are varied and feature a mix of second-growth redwood and mixed conifer forests, coastal scrub communities on hills and bluffs, northern maritime chaparral communities at higher elevations, coastal prairies and grasslands along the western slopes of the Santa Cruz Mountains (California Department of Forestry and Fire Protection [CAL FIRE] 2018a). In recent years, the Santa Cruz Mountains have been prone to periodic wildfire events as a result of fire suppression, the introduction of invasive plant species, and changes in forest management (Fire Safe San Mateo County 2019).

Although wildfires occur on an annual basis throughout the County, they are often contained as a result of early identification, emergency access, and a large fire suppression response. However, fires can quickly increase in size and cause significant damage if ignitions occur during unfavorable weather (i.e., dry and windy) and/or in areas with poor access (CAL FIRE 2018b). Historically, only two state fires have caused enough damage to trigger a state or

federal disaster declaration since 1950 (County of San 2016). While larger fires have ignited in neighboring Santa Clara and Santa Cruz counties over the last decade, the most significant fire in recent years in San Mateo County was the Skeggs Fire in 2017, which burned approximately 50 acres three miles west of the town of Woodside (CAL FIRE 2018c).

Given that a significant portion of San Mateo County is mapped as High or Very High Fire Hazard Severity, many of the routine maintenance areas along County roads, trails, channels and parks fall within these areas. CAL FIRE's Very High Fire Hazard Severity Zone designation indicates areas where the physical conditions (e.g., vegetation, topography, weather, crown fire potential, ember production and movement) create a very high likelihood that the area will burn over a 30 to 50-year time period, and potentially will burn at a high intensity and speed (CAL FIRE 2012). **Figure 3.16-1** shows the proposed program overlain with CAL FIRE Hazard Severity Zones.

3.16.2 REGULATORY SETTING

Federal Laws, Regulations, and Policies

No federal regulations related to wildfire risk and prevention apply to the proposed program.

State Laws, Regulations, and Policies

2018 Strategic Fire Plan for California

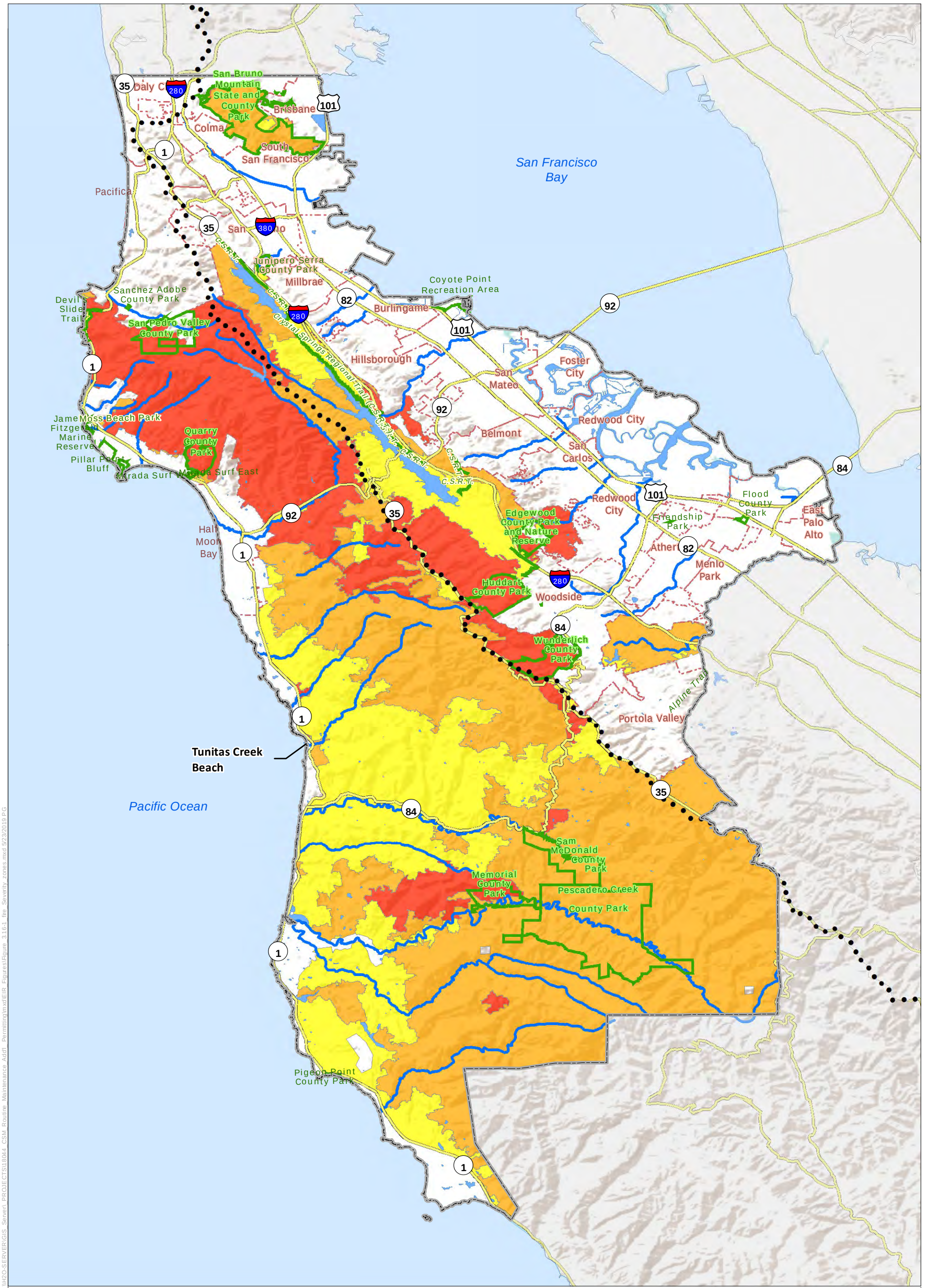
The Strategic Fire Plan, developed by the State Board of Forestry and Fire Protection, provides direction and guidance to the California Department of Forestry and Fire Protection (CAL FIRE) and its 21 field units. The 2018 Plan sets forth a number of goals focused on fire prevention, natural resource management, and fire suppression efforts, and are summarized here:

a. Improve the availability and use of consistent, shared information on hazard and risk assessment;

b. Promote the role of local planning processes, including general plans, new development, and existing developments, and recognize individual landowner/homeowner responsibilities;

c. Foster a shared vision among communities and the multiple fire protection jurisdictions, including county-based plans and community-based plans such as Community Wildfire Protection Plans (CWPP);

d. Increase awareness and actions to improve fire resistance of man-made assets at risk;


San Francisco Bay
Pacific Ocean
Tunitas Creek Beach
San Bruno Mountain State and County Park
Daly City
Brisbane
Colma
South San Francisco
Pacifica
San Bruno
Junipero Serra County Park
Millbrae
Coyote Point Recreation Area
Burlingame
Sanchez Adobe County Park
Devil's Slide Trail
San Pedro Valley County Park
Crystal Springs Regional Trail (C.S.R.T.)
Hillsborough
San Mateo
Foster City
Redwood City
Belmont
San Carlos
Jame Moss Beach Park
Fitzgerald Marine Reserve
Quarry County Park
Pillar Point Bluff
Mirada Surf
Mirada Surf East
Edgewood County Park and Nature Reserve
Redwood City
Friendship Park
Flood County Park
East Palo Alto
Menlo Park
Atherton
Huddart County Park
Woodside
Wunderlich County Park
Alpine Trail
Portola Valley
Sam McDonald County Park
Memorial County Park
Pescadero Creek County Park
Pigeon Point County Park
Basebap Sources: Sources: Esri, USGS, NOAA
N
0
5
Miles
Fire Hazard Severity Zones
Moderate
High
Very High
San Mateo County Parks
Highway / Major Road
Incorporated City
Water Feature
Ocean / Bay
Major Creek
San Mateo County Boundary
Bayside / Coastside Watershed Boundary
Source: San Mateo County GIS 2018; CalFire 2007
Horizon WATER and ENVIRONMENT
Figure 3.16-1
Fire Hazard Severity Zones
San Mateo County Routine Maintenance Program
\\H2O-SERVER\GIS Server\ PROJECTS\18044 CSM Routine Maintenance Addl' Permitting\mxd\EIR Figures\Figure 3.16-1 fire Severity zones.mxd 5/23/2019 P.G

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e. Increase awareness and actions to improve fire resistance of man-made assets at risk and fire resilience of wildland environments through natural resource management;

f. Integrate implementation of fire and vegetative fuels management practices consistent with the priorities of landowners or managers;

g. Determine and seek the needed level of resources for fire prevention, natural resource management, fire suppression, and related services; and

h. Implement needed assessments and actions for post-fire protection and recovery.

Community Wildfire Prevention & Mitigation Report

The Community Wildfire Prevention & Mitigation Report was prepared by the California Department of Forestry and Fire Protection (CAL FIRE 2019) in response to Executive Order N-05-19, which directs CAL FIRE, in consultation with other state agencies and departments, to recommend immediate, medium and long-term actions to help prevent destructive wildfires. Based on local fire plans developed by CAL FIRE Units, CAL FIRE identified 35 priority projects for immediate implementation to help reduce public safety risk for over 200 communities, including removal of hazardous dead trees, vegetation clearing, creation of fuel breaks and community defensible spaces, and creation of ingress and egress corridors. The report also identifies near-term administrative, regulatory and policy actions to address community vulnerability and wildfire fuel buildup through rapid deployment of resources.

California Public Resources Code

The Public Resources Code (PRC) includes fire safety regulations restricting the use of certain equipment that could produce sparks or flames, and specifies requirements for the safe use of gasoline-powered tools in fire hazard areas. County staff and contractors must comply with the following requirements in the PRC during construction activities at any sites with forest-, brush-, or grass-covered land:

a. Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442).

b. Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (PRC Section 4428).

c. On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire-suppression equipment (PRC Section 4427).

d. On days when a burning permit is required, portable tools powered by gasoline-fueled internal combustion engines must not be used within 25 feet of any flammable materials (PRC Section 4431).

Local Laws, Regulations, and Policies

Applicable goals and policies in General Plans for jurisdictions where maintenance activities may occur are presented in Appendix C. A description of the San Mateo County Hazard Mitigation Plan (2016), which addresses wildfire among other natural disaster risks in the County, is provided in Section 3.8, *Hazards and Hazardous Materials.*

San Mateo-Santa Cruz Community Wildfire Protection Plan

The San Mateo-Santa Cruz County Community Wildfire Protection Plan (CWPP), updated in 2018, identifies the hazards and risks associated with wildfires in both San Mateo and Santa Cruz Counties and proposes strategies to mitigate those risks. Developed by CAL FIRE and the Resource Conservation District for San Mateo County and Santa Cruz County, the CWPP reflects community and agency stakeholder input from the two counties following the Summit Fire in 2008, and recommends projects to reduce the potential for catastrophic wildfire. The CWPP also serves as a mechanism to obtain state grant funding to implement those projects.

San Mateo-Santa Cruz Unit 2018 Strategic Fire Plan

The San Mateo-Santa Cruz Unit 2018 Strategic Fire Plan, developed by CAL FIRE San Mateo-Santa Cruz Unit, identifies fire management strategies and tactics intended to reduce the hazards associated with wildfires and recommends preventative measures to make homes, neighborhoods, and communities within the Unit area's approximate 894 square miles more defensible from wildfire. The Unit Strategic Fire Plan also offers specific strategies to address priority landscapes (i.e., annual grasslands and coastal scrub), describes unit preparedness and capabilities, documents community collaboration, and outlines pre-fire management strategies.

3.16.3 IMPACT ANALYSIS

Methodology

This impact analysis considers whether implementation of the proposed program would result in significant adverse impacts related to wildfires. The analysis focuses on reasonably foreseeable effects of the proposed program as compared with baseline conditions. The potential direct and indirect effects of the proposed program are described and evaluated according to significance criteria from Appendix G of the State CEQA Guidelines (below) . The County has incorporated best management practices (BMPs) into the proposed program to reduce or prevent the occurrence of potential environmental effects. Applicable BMPs are also identified below.

Criteria for Determining Significance

Based on Appendix G of the State CEQA Guidelines, if the proposed program is located near state responsibility areas or lands classified as very high fire severity zones, the proposed program would result in a significant impact related to wildfire if it would:

- Substantially impair an adopted emergency response plan or emergency evacuation plan;

- Exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire due to slope, prevailing winds, and other factors;

- Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or

- Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Because the proposed program includes lands classified as very high fire severity zones, the above criteria are evaluated in the impact analysis below.

Environmental Impacts

Impact WLD-1: Substantially Impair an Adopted Emergency Response Plan or Emergency Evacuation Plan (*Less than Significant*)

As described in Section 3.14, *Transportation and Traffic,* and Section 3.8, *Hazards and Hazardous Materials,* temporary closure of one traffic lane may be necessary during proposed maintenance activities, many of which would occur along County roads. If lane closures or traffic generated by maintenance activities were to interfere with emergency response measures such that response times were extended, a significant impact would result. However, given the temporary nature of maintenance activities, the proposed program is not expected to have long-term impacts on emergency response or evacuation plans.

Applicable Best Management Practices

The County would implement the following BMPs to minimize any temporary impacts by ensuring that temporary lane closures are coordinated with local emergency response agencies and that road access is maintained. If maintenance activities would block road access temporarily for brief periods, nearby property owners and residents would be notified before work begins. A description of these BMPs are provided in Table 2-3 in Chapter 2.

- BMP GEN-17: Maintain Traffic Flow
- BMP GEN-18: Traffic Control and Public Safety

Conclusion

With implementation of these BMPs, impacts to an adopted emergency response plan or emergency evacuation plan would be less than significant. Any traffic lane closures that may potentially interfere with emergency response measures would be temporary in nature. If anything, and as described in Section 3.8, maintaining vegetation along County roads and trails which would be conducted for the purposes of ensuring visibility for motorists and fuel management, would also have a beneficial effect by enabling adequate emergency vehicle access along these facilities. Also, maintaining County infrastructure in a timely fashion

prevents roadway failure and/or significant reduction in roadway width. Therefore, this impact would be **less than significant** and no mitigation is required.

Impact WLD-2: Exacerbate Wildfire Risks, and Thereby Expose Project Occupants to Pollutant Concentrations from a Wildfire / Expose People or Structures to Risks (e.g. flooding or landslides) (*Less than Significant*)

Proposed maintenance activities would not involve placement of people or habitable structures in areas without adequate fire protection. Additionally, proposed maintenance activities would not result in the creation of new wildland areas which could increase fire dangers. The proposed program is focused on maintaining existing facilities under DPW and the Parks Department's maintenance responsibility such as County roads, trails, parks, channels and stream courses. Indeed, routine vegetation management activities conducted routinely through the proposed program such as mowing, trimming and pruning, tree removal, and burn piles have the specific objective of reducing fire fuel loads and fire hazards. In particular, fuel management activities conducted by the County (including burn piles, selective tree thinning and selective removal of undergrowth and secondary tree growth of non-native plants) would help protect people, structures and habitat from wildfire risks. The Parks Department also conducts mowing along County-maintained trails, fire access roads and other highly used recreational areas to control growth of non-native plants, maintain fire breaks and reduce fuel loads, and to maintain trails and other highly used recreational areas. Other routine maintenance activities such as downed tree management, erosion protection, and bank stabilization would also minimize downstream flooding or landslides in the event of a wildfire in the vicinity of the proposed program.

Because certain maintenance activities would be conducted during the dry summer months when fire danger is the highest, there is a potential for an accidental ignition of a wildland fire. While the County aims to conduct burn piling before mid-June prior to the peak of wildfire season, the process of burning material could ignite a wildfire if not controlled properly. The County would implement the BMP described below to reduce potential impacts, which requires on-site fire suppression equipment, spark arrestors on all equipment with internal combustion engines, and restricts activities on high fire danger days.

Applicable Best Management Practices

The County would implement the following BMP to minimize wildfire risks while maintenance activities are conducted by the County. A description of this BMP is provided in Table 2-3 in Chapter 2.

- BMP GEN-23: Fire Prevention

Conclusion

The proposed program would reduce the risk of wildfire through targeted vegetation and fuel management activities conducted along County roads, trails, stream courses, culverts and in County Parks. In concert with the implementation of BMP GEN-23, the proposed program would neither exacerbate wildfire risks and expose Project occupants to pollutant concentrations from a wildfire, nor would it expose people or structures to significant risks, including downslope or downstream flooding or landslides. The proposed Project would

reduce the risks and hazards associated with wildfire. Therefore, this impact would be **less than significant** and no mitigation is required.

Impact WLD-3: Require the Installation or Maintenance of Associated Infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that May Exacerbate Fire Risk (*Less than Significant*)

Primary maintenance activities include a mix of vegetation management, repair or replacement of deteriorating culverts, bank stabilization, slip-out and slide repairs, sediment removal, bridge maintenance, and County road and trail maintenance. The majority of DPW activities that would be conducted on the Bayside of the County are unlikely to exacerbate fire risks, given the level of urbanization and development in areas along the San Francisco Bay. Some County Parks on the Bayside, however, are located on undeveloped land designated as "high" or "very high" fire risk areas such as San Bruno Mountain State and County Park, Huddart County Park, and Wunderlich County Park. In addition, some maintenance activities that would be conducted on the Coastside could potentially be in areas designated as having "high" or "very high" fire risk.

Maintenance activities such as excavation of sediment from channels and culverts and bank repair activities may require temporary site access for staging of equipment and vehicles; however, these activities would primarily take place on existing access roads adjacent to channels. Levees and floodwalls along County maintained channels typically have at least one access road running along the top-of-bank on one side of the channel. Where feasible, mechanized sediment removal is conducted using an excavator from the top-of-bank access road. As such, proposed maintenance activities would not require the installation of new maintenance roads or other infrastructure.

The proposed program would, however, involve maintenance of both paved and unpaved road surfaces in unincorporated areas of the County. To the extent feasible, maintenance of roads would occur during the dry season, typically between April and October. Primary paved road maintenance activities include repairing potholes and roadway bases, repaving, replenishing gravel, extending pavement edges, paving graveled shoulders, sealing cracks and chips and slurry, resurfacing, and adding pavement marking and traffic control features. Other paved road maintenance activities include street sweeping to remove soil, organic material, dust and debris from County roads; and maintaining shoulders within the County's right-of-way to provide a smooth transition from the edge of pavement to the shoulder surface, where feasible.

Primary unpaved road maintenance activities involve re-grading the road to its existing grade or original cut, repair of rolling dips, filling ruts, relocating road surface materials that have moved due to erosion, re-establishing turn around areas for emergency vehicles, and repairing slip-outs/slides. The latter repairs are performed on an as-needed basis to prevent additional failure of supporting soils or structures, and to reduce the potential hazard of falling debris.

In addition to road maintenance activities, the County routinely conducts vegetation management activities along County roads, fire access roads, and trails to control non-native vegetation growth, maintain fire breaks, and reduce fuel loads. Mowing is conducted at various times of the year and is dependent upon the amount of rain received in a given year. As described previously, burn pile vegetation management is another tool used for

maintaining fuel breaks and vegetation density along County park boundaries. While the County aims to conduct burn piling before mid-June prior to the peak of wildfire season, the process of burning vegetated material could ignite a wildfire if not controlled properly.

Given that road maintenance activities would primarily occur during the dry season and mowing and use of burn piles could also coincide with the dry season when fire danger is highest, there is potential for an accidental ignition of wildland fire due to operating construction equipment. The County would implement BMPs described below to reduce potential impacts, which require on-site fire suppression equipment, spark arrestors on all equipment with internal combustion engines, restrict activities on high fire danger days, and require that all equipment and vehicles are checked for leaking oil and fluids.

Applicable Best Management Practices

The County would implement the following BMPs to minimize potential impacts to reduce fire hazard risks during road maintenance activities and mowing along County roads and trails. A description of these BMPs is provided in Table 2-3 in Chapter 2.

- BMP GEN-23: Fire Prevention
- BMP GEN-9: Vehicle Maintenance and Parking
- BMP GEN-10: Equipment Maintenance & Fueling

Conclusion

The proposed program would not require the installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that would exacerbate fire risk. However, it would require periodic road maintenance and mowing along County roads and trails. With implementation of the aforementioned BMPs, this impact would be **less than significant** and no mitigation would be required.

Chapter 4
Other Statutory Considerations

4.1 INTRODUCTION

This chapter describes other aspects and potential impacts of the County of San Mateo Routine Maintenance Program (proposed program) that have not already been described, as required by California Environmental Quality Act (CEQA) Guidelines. This chapter includes a discussion of irreversible impacts, significant but mitigable impacts, growth-inducing impacts, and cumulative impacts of the proposed program.

4.2 IRREVERSIBLE IMPACTS

State CEQA Guidelines Section 15126.2(d) requires that an environmental impact report (EIR) must identify any irreversible impacts (also referred to as irreversible environmental changes) that may be caused by a proposed project, including current or future commitments to using non-renewable resources, secondary impacts, and growth-inducing impacts that commit future generations to similar uses. Section 15126 of the State CEQA Guidelines states that significant, irreversible environmental changes associated with a proposed project may include:

- uses of non-renewable resources during the initial and continued phases of the project that may be irreversible because a large commitment of such resources makes removal or non-use thereafter unlikely;
- primary impacts and, particularly, secondary impacts (such as a highway improvement that provides access to a previously inaccessible area) that commit future generations to similar uses; and
- irreversible damage that may result from environmental accidents associated with the project.

An irreversible commitment of nonrenewable resources would occur as a result of the proposed program. Implementation of the proposed program would involve maintenance activities requiring the temporary use of heavy equipment, which would require the use of fossil fuels, and would involve the permanent use of raw materials, including nonrenewable resources. Future use of such resources would not be compulsory if alternative means of maintenance were implemented to alleviate the need for the proposed program. The routine practices to be implemented under the proposed program would likely reduce the need for larger and more complex maintenance projects that could be required over time if routine maintenance activities were deferred. In addition, the proposed program is not anticipated to have secondary impacts that would commit future generations to similar uses or result in irreversible damage nor would it involve expansion of existing facilities.

4.3 SIGNIFICANT BUT MITIGABLE IMPACTS

Section 15126.2(c) of the CEQA Guidelines further requires an EIR to describe any significant impacts that cannot be mitigated to a level of insignificance. The proposed program would not result in any significant and unavoidable impacts. The following impacts are considered significant but mitigable. Refer to Section 3.3 of this Draft Environmental Impact Report (DEIR) for a full description of these impacts.

- Impact AQ-4: Result in Other Emissions Such as Odors Adversely Affecting a Substantial Number of People (Section 3.3)
- Impact BIO-1: Potential Adverse Effects on Special-Status Plant or Animal Species (Section 3.4, *Biological Resources*)
- Impact BIO-2: Potential Adverse Effects on Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations or by CDFW, USFWS, or NMFS (Section 3.4)
- Impact BIO-3: Potential Adverse Effects on Federally or State Protected Wetlands as Defined by Section 404 of the Clean Water Act (Section 3.4)
- Impact BIO-4: Potential Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites (Section 3.4)
- Impact BIO-6: Be Located inside or within 200 Feet of a Marine or Wildlife Reserve (Section 3.4)
- Impact HAZ-1: Create a Significant Hazard to the Public or the Environment from the Routine Transport, Use, or Disposal of Hazardous Materials (Section 3.8, *Hazards and Hazardous Materials*)
- Impact HAZ-4: Result in a Significant Hazard to the Public or the Environment from Location on a Known Hazardous Materials Site (Section 3.8)
- Impact NOI-1: Substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed maintenance areas in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state or federal standards (Section 3.11, *Noise*)
- Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels (Section 3.11)
- Impact NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan area, or, within 2 miles of a public airport or public-use airport, expose people residing or working in the project site to excessive noise levels (Section 3.11)
- Cumulative Impact BIO-1: Cumulative Effects on Biological Resources

4.4 GROWTH INDUCEMENT

Section 15126.2(e) of the State CEQA Guidelines requires an EIR to include a detailed statement of a proposed project's anticipated growth-inducing impacts. The analysis of growth-inducing impacts must discuss the ways in which a proposed project could foster

economic or population growth or the construction of additional housing in the project area. The analysis also must address project-related actions that, either individually or cumulatively, would remove existing obstacles to population growth. A proposed project is considered growth inducing if it induces growth directly (through the construction of new housing or increasing population) or indirectly (increasing employment opportunities or eliminating existing constraints on development). Under CEQA, growth is not assumed to be either beneficial or detrimental.

The proposed program would not involve new development that could directly induce population growth, and it would not involve the extension of infrastructure that could indirectly induce population growth. The proposed program would not involve construction of new housing or create a demand for additional housing, such as through commercial development. Minimal additional staffing is expected to be required to carry out the maintenance activities under the proposed program. Furthermore, on its own, the proposed program would not displace any existing housing units or persons. The proposed maintenance activities would be limited to lands owned or maintained by the County of San Mateo (County) and no housing (aside from housing for County Park rangers) exists within the limits of the proposed maintenance activities. Therefore, the proposed program would not result in any growth-inducing impacts.

4.5 CUMULATIVE IMPACTS

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines Section 15355). Cumulative impacts reflect the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant projects taking place over a period of time (State CEQA Guidelines Section 15355[b]).

State CEQA Guidelines Section 15130(a) requires that an EIR address the cumulative impacts of a proposed project when:

- the cumulative impacts are expected to be significant and
- the project's incremental effect is expected to be cumulatively considerable, or significant, when viewed in combination with the effects of past, current, and probable future projects.

An EIR does not need to discuss cumulative impacts that do not result in part from the project evaluated in the EIR.

State CEQA Guidelines Section 15130 requires an analysis of cumulative impacts to contain the following elements:

- Either a list of past, present, and probable future projects producing related cumulative impacts, or a summary of projections contained in an adopted local, regional, or statewide plan that describes or evaluates conditions contributing to the cumulative effect;

- A definition of the geographic scope of the area affected by the cumulative effect, and a reasonable explanation for the geographic limitation used;
- A summary of the environmental effects expected to result from those projects with specific reference to additional information stating where that information is available; and
- A reasonable analysis of the combined (cumulative) impacts of the relevant projects.

The discussion of cumulative impacts is not required to provide as much detail as the discussion of effects attributable to the project alone. Rather, the level of detail should be guided by what is practical and reasonable. In addition, Section 15130(e) of the State CEQA Guidelines directs that, if a cumulative impact is adequately addressed in a previous EIR for a general plan and the proposed project is consistent with that general plan, the project EIR need not analyze that cumulative impact further.

Lead agencies may use a "list" approach to identify related projects or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document (State CEQA Guidelines Section 15130[b]), known as the "projection" approach.

4.5.1 METHODS USED IN THIS ANALYSIS

As described above, Section 15130 of the State CEQA Guidelines provides two recommended approaches for analyzing and preparing an adequate discussion of significant cumulative impacts:

- the *list approach*, which involves listing past, present, and probable future projects producing related or cumulative impacts, including those projects outside the control of the lead agency; or
- the *projection approach*, which utilizes a summary of projections contained in an adopted general plan, a related planning document, or an adopted environmental document that evaluated regional or area-wide conditions contributing to the cumulative impact.

This discussion combines the list approach and the projection approach for the proposed program's cumulative impact analysis. The cumulative impact analysis focuses on the potential cumulative impacts of the proposed program for environmental resources that could be cumulatively affected by the proposed program in conjunction with other past, present, and reasonably foreseeable future projects.

Table 4-1 lists projects that could affect resources similar to those affected by the proposed program. This list was developed by reviewing the County's 5-year Capital Improvement Program (CIP) and other sources available on the County's website and San Mateo Resource Conservation District's (RCD's) website. In addition, the cumulative impact analysis considered growth and development projections for the program area.

Table 4-2 describes the planning documents containing growth and development projections and **Table 4-3** qualitatively shows the population and housing growth

projections for the County and cities in the program area. The cumulative impact analysis also takes into consideration previously conducted routine maintenance work conducted throughout the County. **Table 4-4** summarizes the number of sites per type of maintenance activity conducted throughout the County from 2012 to 2017.

Table 4-1. County of San Mateo 5-Year Capital Improvement Program, Other County Projects, and Project Activities that could Potentially Affect Resources Similar to the Proposed Program in Fiscal Years 2018-2022

Project	Activities that Could Potentially Affect Resources Similar to the Proposed Program
CIP Projects	
County Office Building 3	The new County Office Building 3 will be located at County Center in Redwood City. The building will encompass approximately half a block and require the relocation of a few buildings including the historic Lathrop House. The facility will improve services provided to residents, workplace environment and amenities for County staff, and reduce long-term maintenance and operations costs. The project is expected to be complete in 2021. Facility construction and operation could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
County Government Center Parking Structure II	The new parking structure will be located at 400 Middlefield Road in Redwood City. The parking structure will provide parking for County agencies, judicial facilities, jury parking, County employees, and the general public. The project is expected to be completed in 2020. Facility construction and operation could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
Cordilleras Mental Health Facility Replacement	This replacement mental health facility will be located off Edmonds Road in Redwood City to replace the existing one. The facility will be designed to provide effective programs to transition seriously mental ill residents back to community living. Facility construction and operation could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program. Facility construction and operation could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
San Mateo Medical Center	The project includes renovating the ground floor of the Nursing Wing and the Central Plant to house Office of Statewide Health Planning and Development essential services from the existing Health Administration Building, demolishing the Health Administration Building and Health Services Building, and constructing a new administration building. The project is expected to be complete in 2022. Facility construction and operation could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.

Project	Activities that Could Potentially Affect Resources Similar to the Proposed Program
South San Francisco County Campus	This project will provide local residents with a range of health care and associated services at one convenient location. The new facility is anticipated to serve clients that currently travel to San Mateo and Redwood City for medical services. Facility construction and operation could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
Animal Care Shelter	The new animal shelter will be constructed at Coyote Point to replace the existing facility. The new facility will be equipped to meet the current standards of animal care and provide animal control, licensing, public receiving, domestic animal holding, and euthanasia services to the 20 cities in the county.
Skylonda Fire Station Replacement	The replacement fire station will provide first responders with a modern facility to better support critical fire protection services in the region. Facility construction could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
Pescadero Fire Station	Construction of the new fire station in Pescadero will provide critical fire protection services to the growing population in the region. Facility construction could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
La Honda Firehouse 57 Remodel & Waterline Extension	Construction of a second-story addition above the existing firehouse structure, a small storage shed, and a new water line extension that would provide adequate pressure to support the installation of a fire sprinkler system. Facility construction could generate temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
Department of Public Works Projects	
Butano Creek Channel Stabilization and Habitat Enhancement at Cloverdale Road Bridge Project	The project would be located just south of Eden West Road within Butano Creek at the Cloverdale Road bridge crossing in the community of Pescadero. The project involves raising the channel bed in the highly eroded bridge reach area (approximately 670 feet) and creating a more gradual stream slope that is less erosive. The channel bed would be raised with engineered streambed material to create a roughened natural channel conforming to the existing banks. Fish passage resting pools and large woody debris would also be incorporated to provide cover and refuge for salmonids. This project is expected to provide multiple benefits such as preventing ~6,000 cubic yards of sediment that would otherwise get transported and deposited downstream of the project reach and thus help achieve objectives of the sediment TMDL for the Pescadero-Butano Watershed.
Pescadero Creek Dredging – Butano Creek	Sediment removal at the Pescadero Creek Road crossing over Butano Creek completed in winter 2017-2018. Work resulted in impacts on riparian habitat. The site will be inspected, maintained, and reported on annually which could overlap with maintenance conducted under the proposed program.

Project	Activities that Could Potentially Affect Resources Similar to the Proposed Program
Mirada Road Pedestrian Bridge Replacement and Bank Stabilization Project	The County is planning to replace a pedestrian bridge and soil nailing of eroded slopes in the vicinity of Mirada Road south of Medio Avenue. The County
Alpine Trail Improvement Bike/Pedestrian Trail	Stabilization of the creek bank along Los Trancos Creek at three locations, and rehabilitation of the County's segment of the trail from the City of Menlo Park to the Town of Portola Valley. Rehabilitation of the trail involved removing and replacing 1.84 miles of existing pavement. Work was completed in 2018.
2016/2017 Winter Storm Damage Repairs	Repair of sites that incurred storm damage over the 2016/17 winter season, including Gazos Creek Road, Old La Honda Road, Alpine Road, Mirada Road, Entrada Way, Portola Road and Capistrano Road. Damages include failed road sections and adjacent hillsides that will require reconstruction and/or vegetation restoration to re-establish the roadway width. Repair of these sites could result in temporary impacts to hydrology and biological resources and temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.
Colma Creek Flood Control Channel Maintenance Project	Targeted sediment removal and repair/replacement of culverts along 5.4 miles of the Colma Creek flood control channel. Other maintenance activities include clearing of blocked culvert outfalls, repair of concrete channel banks and bed, trash and debris removal, vegetation management, and trash capture devices. This project could generate temporary increases in traffic, air emissions and noise if activities overlap with those conducted under the proposed program.
Parallel Trail Creation Highway 1	The project includes design and construction of an approximately 0.9 mile-multi-use trail parallel to Highway 1 in the Caltrans right-of-way between Coronada Street and Mirada Road. The trail will become a component of the California Coastal Trail network, a network of public trails along the 1,200-mile coastline. The project is estimated for completion in 2021.
CSA 11 Water Supply and Sustainability Project: Storage Tank and Well	The project included constructing a new municipal groundwater well and a 140,000-gallon storage tank for the CSA 11 Water System, which serves the unincorporated community of Pescadero (approximately 100 people). The new storage tank provides twice the amount of water storage that previously existed. The project was completed in 2018.
Radio Shop Project at Chestnut and Grant Yard	The facility at Chestnut Street in Redwood City, currently housing Agriculture/Weights, will be improved so it can house the Radio Shop. The existing buildings will be replaced with a new structure for staff, equipment, and storage and a covered shelter for operations. The project is estimated to be complete in 2021.
Parks Department Projects	
Memorial Park Wastewater Treatment and Infrastructure Replacement Project	Replacement of the old treatment plant along with evaluation and repair of the existing collection system. Construction of the new Wastewater Treatment Plant (WWTP) could overlap proposed program activities at Memorial County Park, both of which would generate temporary increases in traffic, air emissions and noise. Project construction is estimated to be complete by 2022.

Project	Activities that Could Potentially Affect Resources Similar to the Proposed Program
Crystal Springs Trail Construction and Improvements	Improvement of existing trails or completion of trail connections, including the Gap Trail Project to connect the Sawyer Camp Trail with the South of Dam Trail. These trails are part of the Crystal Springs Regional Trail, which when complete, will run 17.5 miles from San Bruno to Woodside. Trail construction activities could generate temporary noise, air pollutants, and traffic delays which may overlap in duration with maintenance activities along Crystal Springs Trail which would be conducted under the proposed program.
Coyote Point Eastern Promenade Rejuvenation Project	Improvements include a new sandy beach, new sand dunes with native plants, a re-located restroom building, a re-configured parking area, new pathways to the sand dunes to the beach. Project is expected to be complete in 2021. This project could generate temporary increases in traffic, air emissions, noise and disrupt public access if activities overlap with those conducted under the proposed program.
Pedro Point Headlands Improvement & Restoration Project	Improvements will include eliminating existing gullies and trail scars, re-establishing the natural topography and positive drainage within highly eroded coastal bluff areas, restoring disturbed trails and gullies, and propagating native plants. This project could result in temporary impacts to water quality and biological resources and result in temporary increases in traffic, air emissions and noise that may overlap in duration of maintenance activities conducted under the proposed program.
Tunitas Creek Beach Improvement Project	The project involves the planning, permitting and design of visitor-serving amenities required to convert the Tunitas Creek Beach property into a County Park. A Request for Proposals for consultants to prepare the permitting, planning and design deliverables was released in May 2019. The County anticipates having 100% design completed in September 2020 at which time a construction contractor will be hired to construct the facilities.
Flood Park Improvements and Renovations	The Parks Department is planning to renovate the existing baseball field, construct a new soccer/lacrosse field, and install a new pump track and play structure. The project is currently in the design phase and construction is anticipated to commence in 2021-2022.
Other County Projects	
Crystal Springs Dam Bridge Replacement Project	Construction of a new replacement cast-in-place, post-tensioned concrete box girder bridge on top of the Lower Crystal Springs Dam. Work also included installation of conduit support brackets for an electrical transmission line, grading, drainage facilities, paving, and parking lot improvements. The project was completed in December 2018.
Bayfront Canal and Atherton Channel Flood Management & Restoration Project	Rerouting of canal flows to the South Bay Salt Pond Restoration area to alleviate flooding in Meno Park and Atherton. Work will include installation of underground conduits, a new outlet structure, and a diversion structure to capture floating debris and prevent trash from going into the Bay. This project could result in temporary impacts to hydrology and biological resources and temporary increases in traffic, air emissions, and noise that may overlap in duration of maintenance activities conducted under the proposed program.

Project	Activities that Could Potentially Affect Resources Similar to the Proposed Program
Colma Creek Floodwall Project	County proposes to construct floodwalls and repair or replace culverts along Colma Creek below Utah Avenue bridge to approximately 1,410 feet downstream of the confluence with Navigable Slough. This project could generate temporary increases in traffic, air emissions and noise if activities overlap with those conducted under the proposed program.
San Mateo Resource Conservation District (RCD) Projects	
Butano Creek Floodplain Restoration Project	In partnership with the County, California State Parks, and National Oceanic and Atmospheric Administration (NOAA), the County RCD constructed a restoration project that involved removing 45,000 cubic yards of accumulated sediment in Lower Butano Creek and reusing the dredge material to fill historic human-made pits in Pescadero Marsh Natural Preserve. This project has multiple benefits as it will: restore access of the creek for threatened steelhead trout and endangered coho salmon, reduce the extent, duration and frequency of flooding at Pescadero Creek Road, and improve the likelihood of salmonid survival by reducing the risk and/or severity of fish kills by improving water quality conditions in Butano Creek. The project was completed in fall 2019.
Alpine Fish Passage Project	Located at the intersection of Pescadero Creek Road and Alpine Creek Road in La Honda, the project will allow access for both adult and juvenile salmonids to approximately 3 miles of quality spawning and rearing habitat over the full range of fish passage design flows. The project involved modifications at the road crossing and the reach of Alpine Creek directly downstream of the culvert to improve migratory conditions for coho salmon, steelhead trout and Pacific lamprey. Restoration actions included lowering the base of the culvert and installing a new culvert floor with sediment retention baffles, and reconstructing 300 feet of stream channel downstream of the culvert at a 4% grade. The project was completed in fall 2019.
Memorial Park Fish Passage Barrier removal Project	The RCD partnered with County Parks to remove two fish passage barriers in Pescadero Creek – demolishing a concrete dame and modifying a road crossing – at Memorial County Park. The project opened up 62.3 miles of unimpeded access to spawning and rearing habitat for coho salmon and steelhead trout. Project construction was completed in 2016.
Rural Roads Program	As part of this program, the RCD has been conducting roads assessments, developing strategies to improve private rural roads in the County and assisting landowners and managers with proper maintenance of rural roads and sedimentation reducing practices. This program has provided technical assistance for 96.72 miles of rural roads on 55 properties.
Gullies Program	This program focuses on addressing gully erosion in the Butano watershed to help restore coastal creeks (many of which are impaired by sediment) and improve habitat conditions for protected species. This program is conducted in partnership with Natural Resources Conservation Service (NRCS) and U.S. Fish and Wildlife Service (USFWS).

Project	Activities that Could Potentially Affect Resources Similar to the Proposed Program
100 Ponds Project	This project proposes to construct, repair, enhance, and restore farm ponds and other water retention features for a variety of environmental, agricultural, and economic benefits. The project provides integrated benefits for drought preparedness, climate change resilience, ecosystem restoration and protection, and public health. On-farm ponds and similar water retention features can capture and store rainwater for use later in the season while also reducing withdrawals from the creeks during low flow summer months. The ponds will be located on the San Mateo County coast and is anticipated to create habitat for California red-legged frog and San Francisco garter snake, and protect instream flows for coho salmon and steelhead.
Water for Farms, Fish and People	The RCD is partnered with Trout Unlimited, the County, and NRCS on this project focused on San Mateo County's south coast region where farms, fish and people all depend on the same limited water resources. The project includes a series of water use, infrastructure and water management improvements to help farmers conserve, better manage and store water; fix leaks and broken pipes in drinking water supply systems; improve water pumping, delivery and storage facilities; coordinate water users to balance demands on limited resources; and restore water to creeks for special-status species.
Vegetation Management	The RCD and Midpeninsula Regional Open Space District have partnered to eradicate slender false brome (*Brachypodium sylvaticum*). This aggressive perennial grass threatens local redwood forests by displacing tree seedlings and the native forest understory. While the District focuses on removing the weed on its preserves, the RCD is working with adjacent property owners in Woodside and Portola Valley areas.

Source: County of San Mateo 2018 and 2019; County of San Mateo Parks Department 2019a, 2019b, 2019c, 2019; County of San Mateo Project Development Unit 2019; County of San Mateo Public Works Department 2016, 2019a, 2019b, 2019c, 2019d, 2019e; San Mateo Resource Conservation District 2019

Table 4-2. Planning Documents Considered for Cumulative Impact Analysis

Document	Summary
County of San Mateo General Plan (1986)	The County of San Mateo General Plan provides a blueprint for future growth and development of the County and specifically addresses unincorporated areas, and promotes the coordination of federal, state and local agencies in the use and development of unincorporated land. Included in the General Plan are several Area Plans, which contain specific policies addressing a range of topics from erosion and vegetation loss to sensitive habitats. These include the following: the San Bruno Mountain General Plan Amendment, the Emerald Lake Hills Community Plan, the Montara-Moss Beach-El Granada Community Plan, the North Fair Oaks Community Plan, and Skyline Area General Plan, and the Local Coastal Program. Among the Plan's goals are to provide an opportunity for the general public, the Planning Commission and the Board of Supervisors to develop policies that reflect community values and serve as a guide for development and conservation.
City of Pacifica General Plan (2014)	The City of Pacifica General Plan outlines the direction and vision for the future growth of Pacifica. The Plan aims to establish goals and policies to guide development and conservation decisions, and to allow City departments, other public agencies, and private developers to design projects that enhance the character of the community, promote public health, preserve environmental resources, and minimize hazards. Among the many themes identified in the Plan are open space preservation and trail system expansion, and protection from natural hazards such as landslides, flooding and coastal erosion.
City of San Bruno General Plan (2009)	The City of San Bruno General Plan establishes a vision for San Bruno through 2025 and outlines a process to attain this vision, including strategies for preserving neighborhoods, revitalizing its downtown area, fostering transit-oriented development, and expanding the city's affordable housing supply. Among the themes identified in the Plan are the preservation of natural resources and habitat areas (especially in the City's western neighborhoods) and the minimization of threat from geological hazards, seismic events, and flooding.
City of San Mateo General Plan (2010)	The City of San Mateo General Plan (Vision 2030) seeks to establish a balance between the need for development and the preservation of the City's quality of life. Some of the major proposals of the Plan include: Increasing housing opportunities, strengthening the downtown area as a commercial center, concentrating new development near transportation, limiting traffic congestion, increasing open space and recreational opportunities, and establishing and maintaining San Mateo as a sustainable city.
Redwood City General Plan (2010)	The Redwood City General Plan provides the community's blueprint for achieving a more healthy and sustainable future while establishing the basis for zoning regulations and providing guidance in the evaluation of development proposals. The Plan also provides a framework for economic development, transportation improvements, and balancing the need for sustainability, City services, parks, and cultural and historic preservation. Sustainability, through conservation and the development of innovative land use and transportation policies, is a cornerstone of the Plan and is incorporated into each Element.
City of Half Moon Bay General Plan (2013)	The City of Half Moon Bay's General Plan is a blueprint for the City's future and includes policies and regulations to carry out the community's vision. Because the City of Half Moon Bay is located entirely within the California Coastal Zone, the Local Coastal Land Use Plan (the policy component of the Local Coastal Program) serves as the City's Land Use Element. The primary topic areas

Document	Summary
	addressed by both the Plan and Local Coastal Program are conservation and open space, climate action planning, healthy communities, transportation, and land use.
Town of Woodside General Plan (2012)	The Town of Woodside General Plan is a comprehensive guide to the long-range development of Woodside and select areas outside its boundaries. The Plan is intended to inform public dialog and provide guidance to Town officials for the management of the natural and built environment. Among the many goals of the Plan include conservation of water resources, managing stormwater to minimize erosion and runoff, and increasing the availability of affordable housing. The 2012 Update also includes a Sustainability Element, which identifies sustainable concepts found in each element of the Plan.
City of Brisbane General Plan (1994, updated 2018)	The City of Brisbane General Plan is a comprehensive, long-term plan designed to provide policies necessary to support responsible decision-making by the City. The Plan also serves elected and appointed officials and the public to have maps and policies in a format that is easy to access and use. Key issues or major points of information identified in the plan include community character, economic development, land use, transportation and circulation, open space and recreation, community services, conservation, community health and safety, and housing.
City of South San Francisco General Plan (1999)	The purpose of the City of South San Francisco's General Plan is to outline a vision for the City's long range physical and economic development and resource conservation that reflects the community's needs; provide strategies and implementing actions that allow the vision to be accomplished; establish a basis for judging whether specific projects are consistent with the Plan's policies and standards; allow City departments, developers, and public agencies to design projects that will enhance the community while preserving environmental resources and minimizing hazards; and establish priorities for plans and programs.
Town of Colma General Plan (1999)	The Town of Colma General Plan is a comprehensive, long-term plan for the physical development of the Town. The plan includes goals, policies, and action programs that are aimed at sustaining essential economic, environmental, and social attributes of the Town. Emphasis in the plan is placed on the important greenbelt theme of the Town, enhancing the residential environment, and promoting the Town's status as a regional center for cemeteries and commerce.
Daly City General Plan (2013)	The Daly City General Plan represents the City's portrayal of the goals, policies, and specific tasks that will improve the lives of existing residents while accommodating and planning for the needs of the future. The overall objectives of the plan are to enable the community to approve short- and long-term policies encompasses within the plan; establish a vision of the City for the future and identify corresponding land use policies required to advance this vision; and provide a basis for determining which projects are in line with the policies of the plan.
City of Burlingame General Plan (1969, updated 2019)	The City of Burlingame General Plan identifies the community vision for preservation and change in the City. The plan is a long range policy documents that guides decision-making and establishes guidelines for the design and development of projects, conservation of resources, economic development, mobility and infrastructure improvements, expansion of public services and other community amenities. This plan is intended to provide guidance through the year 2040.
City of Millbrae General Plan (1998)	The City of Millbrae General Plan identifies a set of public policies which guide the development and maintenance of the physical environment in the City as well as create establish a vision of how the citizens of the city view their community now and, in the future, and how future planning and development issues will be handled. The goals of the plan are to protect residential neighborhoods and environmental resources; balance future development with the supply of adequate services, facilities, and

Document	Summary
	infrastructure; collaborate on regional planning efforts; meet affordable housing needs; and provide a growing economy within the City.
City of Menlo Park General Plan (2016)	The City of Menlo Park General Plan is a comprehensive long-term plan for the future physical development of the city. Many issues addressed in the general plan focus on the connection between land use and transportation along with climate change, particularly along the city's border with the San Francisco Bay which is subject to sea level rise and coastal flooding. The general plan also includes elements focused on energy, water conservation, as well as the city's need to reduce greenhouse gas emissions to meet City and statewide goals.

Table 4-3. Projected Population and Housing Growth for Jurisdictions in the Program Area for 2020–2030

Jurisdiction	Population		Projected Annual Population Growth (%)	Households		Projected Annual Housing Growth (%)
	2020	2030		2020	2030	
City of Pacifica	38,200	39,200	0.3	14,280	14,510	0.2
City of San Bruno	45,900	51,100	1.1	16,190	17,670	0.9
City of San Mateo	106,000	115,400	0.9	41,690	45,150	0.8
Redwood City	84,000	91,900	0.9	30,920	33,880	1.0
City of Half Moon Bay	11,700	12,200	0.4	4,270	4,400	0.3
Town of Woodside	5,400	5,600	0.4	2,030	2,060	0.2
San Mateo County	775,100	836,100	0.8	277,200	296,280	0.7
City of Brisbane	4,500	4,800	0.6	1,910	2,000	0.5
City of South San Francisco	71,000	78,800	1.1	23,250	25,570	1.0
Town of Colma	1,700	2,000	1.8	490	580	1.8
Daly City	107,100	113,700	0.6	32,650	34,210	0.5
City of Burlingame	31,700	34,800	1.0	13,620	14,890	0.9
City of Millbrae	24,200	27,100	1.2	9,010	10,020	1.1

Source: ABAG 2013

Table 4-4. Number and Type of Routine Maintenance Sites Previously Conducted by DPW from 2012-2017

Routine Maintenance Repair Type	Number of Sites
Bridge repair	1
Sediment removal from channels	10
Culvert repair and maintenance	2
Culvert replacement	39
Culvert replacement and slip-out repair	11
Slip-out/bank stabilization	5
Other roadside drainage maintenance	2

Source: San Mateo County 2019.

Resource Topics Considered and Dismissed

The proposed program has been evaluated for its potential to make a considerable contribution to cumulative impacts related to the following resource topics: air quality, biological resources, and traffic/transportation. Greenhouse gas emissions are inherently a cumulative issue and are already addressed in Section 3.7, *Greenhouse Gas Emissions, Climate Change, and Energy.* In addition, the proposed program's contribution to cumulative air quality impacts are addressed in Section 3.3, *Air Quality.* Therefore, this topic is not discussed further in this section. For all other resource topics, as shown in **Table 4-5**, either significant cumulative impacts do not exist, or the proposed program would not have the potential to make a considerable contribution to any significant cumulative impacts. These resource topics have been dismissed from consideration in the analysis of cumulative impacts and are not discussed further.

Table 4-5. Resource Topics Eliminated from Further Consideration in the Analysis of Cumulative Impacts

Resource Topic Not Discussed Further	Rationale
Aesthetics	Impacts related to aesthetics from other projects and development in the County would be site-specific and dependent upon the type of project. All projects must comply with County land use, zoning, and design regulations which regulate the type of project allowed in an area and include specifications depending upon the project. Adherence to these County regulations minimizes impacts to surrounding visual character and quality. The proposed program involves the repair and maintenance of existing DPW and Parks Department facilities (e.g. roads, culverts, bridges, storm drainage infrastructure, trails) and thus visual conditions would generally improve as a result of implementation of the proposed program. For example, repairing an eroded road or creek embankment under the proposed program would result in an improved visual condition for most viewers compared to a damaged/threatened road or creek embankment. For these reasons, the proposed program would not contribute to a cumulatively significant impact related to aesthetics. Therefore, this resource topic is dismissed from further analysis.
Cultural Resources and Tribal Cultural Resources	Impacts related to cultural and tribal cultural resources from other projects and development in the County would be site-specific and like the proposed program, would be required to assess the presence of such resources prior to construction (e.g., consultation with Native American tribes). If such resources are identified on a given project site, projects would be required to implement standard measures to avoid impacts to cultural resources (similar to the cultural resources best management practices (BMPs) identified in Table 2-4). In addition, protocols for unanticipated discoveries found during construction would also be required. For these reasons, the proposed program would not contribute to a cumulatively significant impact related to cultural or tribal cultural resources. Therefore, these resource topics are dismissed from further analysis.
Geology, Soils, and Seismicity	Impacts related to geology, soils, and seismicity from other projects and development in the County would be site-specific and like the proposed program, would be required to comply with California Building Code (CBC) standards to minimize seismic-related impacts. For these reasons, the proposed project would not contribute to a cumulatively significant impact regarding geology, soils and seismicity. Therefore, this resource topic is dismissed from further analysis.

Resource Topic Not Discussed Further	Rationale
Hazards and Hazardous Materials	Impacts related to hazards and hazardous materials from other projects and development in the County would be site-specific and like the proposed program, would be required to comply with standard federal, state, and local requirements to minimize impacts related to hazardous materials. For these reasons, the proposed program would not contribute to a cumulatively significant impact regarding hazards and hazardous materials. Therefore, this resource topic is dismissed from further analysis.
Hydrology and Water Quality	Similar to the proposed program, other projects and development within the County would be required to comply with state and local permit requirements and implement stormwater management BMPs aimed at reducing pollutants of concern and minimizing the volume and velocity of stormwater runoff from a project site. The proposed program would have long-term environmental benefits in the program area by minimizing erosion, siltation, and flooding and protecting water quality. More specifically, proposed maintenance activities that would contribute to such water quality improvements include culvert repair/replacement, bank stabilization, road slip-out/slide repairs, and in-channel sediment removal. For these reasons, the proposed program would not contribute to a cumulatively significant impact related to hydrology and water quality. Therefore, this resource topic is dismissed from further analysis.
Land Use and Planning	As discussed in Section 3.10, *Land Use and Planning,* the proposed program would not result in impacts that involve the division of an established community. Land use and planning has been dismissed from the cumulative analysis because, similar to the proposed program, other projects are subject to planning, environmental review, and a permitting process. Through these processes, inconsistencies with relevant plans and policies would be resolved before project implementation; therefore, the proposed program would not contribute to a cumulatively significant impact related to conflicts with local plans and policies. This resource topic is dismissed from further analysis.
Noise	Proposed program activities would be temporary at any given site (no longer than a few weeks). As the County grows, the number of noise sources will multiply, and ambient noise levels are likely to increase in a variety of locations, particularly in urban areas and along transit corridors. In general, noise levels are considered to be a localized issue. As such, this increase in noise levels from other projects in the County would not substantially increase in combination with temporary increased noise levels in the specific areas of proposed maintenance work to a substantial degree. Thus, this resource topic is dismissed from further analysis.
Public Services and Utilities	The proposed program would not directly nor indirectly induce growth in the program area that would thereby increase the demand for public services and utilities. For other projects that may indirectly or directly induce population growth, the County and affected communities would plan for and implement appropriate improvements to their public services and utilities such that cumulatively significant impacts related to public services and utilities does not and would not occur. For these reasons, the proposed program would not contribute to a cumulatively significant impact related to public services and utilities. Thus, this resource topic is dismissed from further analysis.

Resource Topic Not Discussed Further	Rationale
Recreation	The proposed program would not induce population growth that would result in a significant increased use of recreational facilities in the program area. Similar to the proposed program, impacts to recreational facilities from other projects and development within the County would be localized and would be short-term. Both the EIR for the Flood Park Improvements and Renovations (County of San Mateo Parks Department 2019d) and the IS/MND for the Coyote Point Eastern Promenade Project (County of San Mateo Parks Department 2016) concluded that neither project would induce population growth to the degree that demand for recreational facilities would increase. The Tunitas Beach Improvement Project is still in the planning phase but is not anticipated to induce population growth. Like other recreational improvement projects listed in Table 4-1, the Tunitas Beach project and the proposed program would improve the experience for recreational users. For these reasons, the proposed program would not contribute to a cumulatively significant impact related to recreation. Thus, this resource topic is dismissed from further analysis.
Wildfire	The proposed program would reduce the risk of wildfire in the program area through targeted vegetation and fuel management activities conducted along County roads, trails, stream courses, culverts and in County Parks. Other projects and development in the County would be required to implement fire safety measures such that projects would not exacerbate wildfire risks. For these reasons, the proposed program would not contribute to a cumulatively significant impact related to wildfire. Thus, this resource topic is dismissed from further analysis.

4.5.2 CUMULATIVE SETTING

This section describes the cumulative impact setting for which the proposed program could contribute to a cumulative impact.

Biological Resources

Ongoing development in the County is anticipated to result in the loss of riparian habitat, wetlands, and other sensitive natural communities. These outcomes likely will lead to direct take or loss of habitat for both common and special-status species. The program area contains a wide-variety of natural communities, including aquatic and wetlands, beaches, dunes and coastlines, forest/woodlands, riparian, and grasslands that support many special-status species. Other projects could also result in temporary but mitigable impacts on riparian forests, wetlands, and special-status species and habitats. As a result, development within the County and other projects along with the proposed program, could result in cumulative effects on special-status species and sensitive habitats.

Transportation and Traffic

Automobile traffic congestion is already a severe problem throughout the County. Providing an adequate automotive transportation network and reducing automobile traffic by providing alternative means of transportation are identified as key issues to be addressed in the general plans of the County and various jurisdictions. Traffic conditions may worsen as development in the County continues. Proposed maintenance activities would generate a minimal increase in vehicle trips and haul trips as the amount of maintenance activities

proposed would not be substantially greater than what occurs under existing conditions. Nonetheless, the proposed program could contribute to traffic congestion in the County. In addition, maintenance activities along County roadway facilities could result in disruptions to traffic flow through temporary closures. In the event that construction activities for other projects in the County take place concurrently with the proposed maintenance activities in the same area, a potentially significant cumulative impact related to increased traffic volumes, traffic safety hazards, and traffic disruptions could occur.

4.5.3 CUMULATIVE IMPACTS

Cumulative Impact BIO-1: Cumulative Effects on Biological Resources (*Less Than Significant with Mitigation)*

Other projects described in Table 4-1 and development in the program area and surrounding areas have the potential to impact biological resources. As shown in Table 4-2, the population in the County is expected to continue to grow and it can be inferred that several factors associated with projected population growth may affect biological resources in the program area. Demand for residential, commercial, and industrial development, wastewater discharge; and recreation activities will increase. Collectively, these demands will put pressure on the same special-status species described in Section 3.4, *Biological Resources,* as well as riparian and wetland habitats.

Ground-disturbing construction activities associated with projects listed in Table 4-1 and other future development planned to support growth envisioned throughout the County (as described in Table 4-2) could disturb or directly injure or kill special-status species, while new development on undeveloped land may result in permanent loss of habitat, all of which could be considered cumulatively significant impacts. However, it is expected that other projects in the program area will implement (or be required to implement) conservation measures to offset their adverse effects on special-status species and other sensitive biological resources. Some cumulative projects in the program area would have long-term benefits to wildlife in the area such as the RCD's Butano Creek Channel Reconnection and Resilience Project, Gullies Program, and Rural Roads Program. These specific projects would reduce sedimentation in the Butano Creek watershed and could benefit certain aquatic species.

The proposed program includes individual maintenance project limits and annual limits (see Section 2.7.2 in Chapter 2, *Project Description*), which thereby help limit the scale of impacts that could occur on biological resources. Nonetheless, as described in Section 3.4, *Biological Resources,* the proposed program would involve maintenance activities in various locations that could impact special-status plants, wildlife, and fish, as well as riparian habitat and wetlands. If left unmitigated, these impacts would result in a considerable contribution to a cumulative impact. However, adherence to BMPs BIO-1 through BIO-16, other stormwater protection BMPs identified in Section 3.4, and implementation of **Mitigation Measures BIO-1** through **BIO-9** would mitigate impacts to special-status species, riparian habitat, and wetlands. Considering that the proposed program would not convert large areas of sensitive habitat and would avoid, minimize, or mitigate temporary and permanent

effects to the maximum extent practicable with implementation of the above-mentioned BMPs and mitigation measures, the proposed program's contribution to cumulative impacts on biological resources would not be considerable. Therefore, this impact would be **less than significant with mitigation**.

Cumulative Impact TRA-1: Disruptions to Traffic Patterns (*Less Than Significant*)

The timing of construction activities of other projects within the County could overlap in duration with program maintenance activities, exacerbating temporary effects on transportation and traffic. If these projects occur simultaneously and in the immediate vicinity of the proposed maintenance activities, some of the same roads would be temporarily affected, creating a significant cumulative impact.

As described in Section 3.14, *Transportation and Traffic*, the proposed program would generate traffic in the form of maintenance worker trips, maintenance activity mobilization and materials deliveries, and trips to dispose of excess materials generated during sediment removal, culvert repair/replacement, and vegetation management. These activities could temporarily create congestion on local streets, which would be largely confined to the immediate area surrounding the maintenance sites. In addition, maintenance activities including culvert repair/replacement, sediment debris and removal, vegetation management, road repaving, bank stabilization, and slip-out and slide repairs could result in temporary lane closures, disrupting the flow of traffic and causing delays. Implementation of BMPs GEN-17 and GEN-18 would ensure that vehicle flow and emergency access is maintained during maintenance work. These measures would also prevent potential impacts from increased vehicle trips on local roadways, and minimize impacts to pedestrian and bicycle traffic and public transit.

Because traffic effects in any given location would be temporary (generally less than a few weeks at a given site) and the proposed program would not add a substantial number of vehicle trips over the long-term, with the implementation of these BMPs, the proposed program would not contribute considerably to cumulative impacts on transportation and traffic. Therefore, this impact would be **less than significant.**

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Chapter 5
Alternatives

5.1 INTRODUCTION

The purpose of the alternatives analysis in an environmental impact report (EIR) is to describe a range of reasonable alternatives to the County of San Mateo Routine Maintenance Program (proposed project) that can feasibly attain most of the identified project objectives but would reduce or avoid one or more of the project's significant impacts. This chapter describes the alternatives to the proposed program that were considered and evaluated for their potential environmental impacts.

The California Environmental Quality Act's (CEQA's) requirements for consideration of alternatives are presented. The chapter then continues with a description of the alternatives development process and an analysis of the alternatives carried forward. Finally, the chapter concludes with identification of the environmentally superior alternative.

5.2 CEQA REQUIREMENTS FOR ALTERNATIVES EVALUATION

The State CEQA Guidelines require that an EIR evaluate a reasonable range of alternatives to a proposed project, including an alternative where no project would be developed. Although no clear rule exists for determining a "reasonable range," the State CEQA Guidelines provide direction on defining the range of alternatives for consideration in the environmental document.

The range of alternatives to be developed under CEQA is governed by the "rule of reason," which requires that the EIR examine only alternatives that could feasibly attain most of the project's objectives and would avoid or substantially lessen one or more of the significant environmental impacts of the project. The range of feasible alternatives should be selected and presented in a manner that will foster public participation and informed decision making (State CEQA Guidelines Section 15126.6[f]). In determining whether an alternative is feasible, lead agencies are guided by the general definition of feasibility found in State CEQA Guidelines Section 15364: "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

In accordance with State CEQA Guidelines Section 15126.6(f)(1), the lead agency must consider site suitability, economic viability, availability of infrastructure, general plan consistency, other regulatory limitations, jurisdictional boundaries, and the proponent's control over alternative sites in determining the range of alternatives to be evaluated in an EIR. An EIR must briefly describe the rationale for selection and rejection of alternatives and the information that the lead agency relied on in making the selection. It should also identify any alternatives that were considered by the lead agency but were rejected as

infeasible during the scoping process, and briefly explain the reason for their exclusion (State CEQA Guidelines Section 15126[c]).

As mentioned above, a "No Project Alternative" also must be considered. The No Project Alternative does not need to feasibly attain most of the project objectives or avoid or substantially lessen one or more of the significant environmental impacts of the project. The intent of the No Project Alternative is to allow decision makers to compare the impacts of approving the project against the impacts of not approving the project (State CEQA Guidelines Section 15126[e][1]).

5.3 ALTERNATIVES DEVELOPMENT PROCESS

The proposed program's goals and objectives and significant environmental impacts are relevant to developing suitable alternatives that aim to achieve the primary project goals and objectives and result in fewer or less intense environmental effects.

5.3.1 PROGRAM OBJECTIVES

The objectives of the proposed program include:

- Maintain the functional integrity and operational quality and capacity of County of San Mateo (County) channels, stormwater facilities, roads, trails, and other recreational facilities.
- Prevent roadway flooding, reduce safety hazards, and minimize potential threats to the structural integrity of roadways, bridges, and stormwater and channel facilities within unincorporated San Mateo County.
- Repair and stabilize eroding streambanks and failing culverts in a timely manner to prevent larger-scale slope failures, avoid emergencies, and minimize sedimentation to downstream water bodies.
- Maintain County facilities and vegetation conditions for public safety purposes including, maintaining visibility, reducing fire risk, and reducing the potential for unauthorized encampments.
- Avoid and minimize potential impacts to the natural environment when conducting routine maintenance activities by incorporating detailed appraisals of habitat, species, and resource conditions while identifying and prioritizing maintenance needs and developing site-specific maintenance plans.
- Protect and enhance the natural environment at County facilities.
- Provide regulatory assurance to enable long-term permits with fewer delays and improved work planning and implementation.
- Develop mitigation approaches in a more strategic and integrative manner that targets areas in the County that could benefit from habitat enhancement, restoration, and/or preservation.

5.3.2 SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE PROPOSED PROGRAM

The proposed program would not result in any significant and unavoidable impacts. The following impacts have been identified as potentially significant, but would be mitigated to a less-than-significant level by implementation of mitigation measures:

- Impact AQ-4: Result in Other Emissions Such as Odors Adversely Affecting a Substantial Number of People (Section 3.3)
- Impact BIO-1: Potential Adverse Effects on Special-Status Plant or Animal Species (Section 3.4, *Biological Resources*)
- Impact BIO-2: Potential Adverse Effects on Riparian Habitat or Other Sensitive Natural Communities Identified in Local or Regional Plans, Policies, Regulations or by California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), or National Marine Fisheries Service (NMFS) (Section 3.4)
- Impact BIO-3: Potential Adverse Effects on Federally or State Protected Wetlands as Defined by Section 404 of the Clean Water Act (Section 3.4)
- Impact BIO-4: Potential Interference with Wildlife Movement, Established Wildlife Corridors, or the Use of Native Wildlife Nursery Sites (Section 3.4)
- Impact BIO-6: Be Located inside or within 200 Feet of a Marine or Wildlife Reserve (Section 3.4)
- Impact HAZ-1: Create a Significant Hazard to the Public or the Environment from the Routine Transport, Use, or Disposal of Hazardous Materials (Section 3.8, *Hazards and Hazardous Materials*)
- Impact HAZ-4: Result in a Significant Hazard to the Public or the Environment from Location on a Known Hazardous Materials Site (Section 3.8)
- Impact NOI-1: Substantial temporary or permanent increase in ambient noise levels in the vicinity of the proposed maintenance areas in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state or federal standards (Section 3.11, *Noise*)
- Impact NOI-2: Generation of excessive groundborne vibration or groundborne noise levels (Section 3.11)
- Impact NOI-3: For a project located within the vicinity of a private airstrip or an airport land use plan area, or, within 2 miles of a public airport or public-use airport, expose people residing or working in the project site to excessive noise levels (Section 3.11)
- Cumulative Impact BIO-1: Cumulative Effects on Biological Resources (Section 4.5.3)

5.4 ALTERNATIVES CONSIDERED

The following alternatives were considered because they would meet most of the proposed program objectives, would be feasible, and would avoid or substantially reduce one or more significant impacts of the proposed program:

- Alternative 1: No Project Alternative
- Alternative 2: Reduced Maintenance Alternative
- Alternative 3: No Herbicide Use Alternative
- Alternative 4: No Tier 3 Maintenance Activities Alternative

Aside from these four alternatives, no other alternatives were considered or dismissed.

5.4.1 ALTERNATIVE 1: NO PROJECT ALTERNATIVE

Characteristics of this Alternative

Under the No Project Alternative, the County would not implement a comprehensive Routine Maintenance Program to guide and direct maintenance activities for County roads, trails, parks, culverts, bridges, green infrastructure (GI) and roadside ditches, and storm drainage facilities under the County's maintenance authority. Rather, similar to baseline conditions, maintenance activities would be implemented on a project-by-project, as-needed basis. This approach would not meet several program objectives such as repairing or stabilizing eroded streambanks and culvert failures in a timely manner, providing regulatory assurance to enable long-term permits with fewer delays, or developing mitigation approaches in a more strategic and integrative manner.

Under the No Project Alternative, maintenance activities would be conducted in a manner similar to baseline conditions as described in Section 3.1.3 of Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures.* The County would need to apply for permits for many of the proposed program activities on an annual basis, including maintenance projects that would affect jurisdictional waters and wetlands such as culvert repair/replacements, bridge maintenance activities, bank stabilization, slip-out/slide repairs, and sediment removal. It is important to note that the underlying need for all of the maintenance activities proposed in the Routine Maintenance Program would remain. However, unlike the proposed program, the County would only be able to address a limited number of those activities annually due to the lack of secured long-term regulatory permits and permitting delays.

Impact Analysis

While some activities under the No Project Alternative would be conducted similar to those under baseline conditions and the proposed program and (e.g. vegetation management, paved road maintenance activities, unpaved trail maintenance), the construction-related impacts of the No Project Alternative would be reduced in comparison to the proposed program at least initially when the County anticipates a greater level of maintenance activities would occur in effort to address deferred maintenance needs. Because fewer maintenance projects would be completed under the No Project Alternative, construction-

related effects (e.g. emissions, noise, traffic, biological and cultural resources effects) would be less severe due to fewer construction vehicle trips, less equipment that would be operating, and less ground disturbance.

Maintenance would occur on an as-needed basis. Under the No Project Alternative, the assessment of annual maintenance needs and use of a planned and prioritized approach that addresses maintenance before issues become larger and more complicated would not occur. As a result, in the long term, by not conducting all routine maintenance activities when work is necessary, the delay or postponement of maintenance generally will cause conditions to worsen. In turn, this alternative would require even larger and more complex maintenance activities in the future to address larger and more complex needs. This generally results in greater impacts to the environment.

Additionally, under the No Project Alternative and based on the County's past experience, permitting maintenance activities that involve in-water work may take more time than anticipated and as a result, conducting such maintenance activities may get delayed. As a result of such delays, there would be additional environmental impacts associated with not conducting maintenance in a timely manner.

Some examples of additional environmental impacts associated with the No Project Alternative include: increased flooding due to lack of sediment clearing from culverts and bridges, increased flooding due to roadside culvert failures, greater erosion and increased water quality degradation due to the County's inability to address road slip-out and streambank failures in a timely manner, and other negative scenarios due to not conducting routine maintenance. Traffic safety hazards for motorists and emergency vehicle access on County roads would also likely worsen as a result of not repairing road slip-outs and damaged culverts along County roads in a timely fashion.

5.4.2 ALTERNATIVE 2: REDUCED MAINTENANCE ALTERNATIVE

Characteristics of this Alternative

Alternative 2 is similar to the proposed program but would reduce the number of maintenance projects completed on an annual basis. **Table 5-1** summarizes the number of maintenance projects or average days per year in which some maintenance activities would occur relative to the proposed program. Some activities would be conducted at a similar level as baseline conditions including vegetation management, paved road maintenance activities, roadside ditch/swale activities, and unpaved road/trail maintenance work. However, fewer culvert replacement, bank stabilization/slip-out repairs, bridge maintenance, and sediment removal projects would occur under Alternative 2.

By limiting the number of maintenance projects that occur in a given year, this alternative would only partially meet program objectives such as maintaining the functional integrity and operational quality and capacity of County facilities, preventing roadway flooding and reducing safety hazards, repairing eroded streambanks and failing culverts in a timely manner to prevent larger-scale slope failures. This alternative would also only partially meet the objective focused on providing regulatory assurance to enable long-term permits with fewer delays.

Table 5-1. Maintenance Activities Conducted under Alternative 2 in Comparison to Proposed Program

Maintenance Activity Type	Number of Maintenance Projects/Year or Days/Year	
	Proposed Program	Alternative 2: Reduced Maintenance Alternative
Culvert Replacement	28 projects/year	14 projects/year
Sediment Removal	5-10 projects/year	1 projects/year
Bank Stabilization/Slip-out Repair	7 projects/year	3 projects/year
Vegetation Management	90 days/year	90 days/year
Reconstruction of Paved Roads	15 days/year	15 days/year
Resurfacing of Paved Roads	128 days/year	128 days/year
Roadside Ditch and Swale Maintenance	66 days/year	66 days/year
Rock Slope Protection Maintenance at Coyote Point	1 project/year	1 project/year
Unpaved Road/Trail Maintenance	25 projects/year	25 projects/year
Other Marina Maintenance Activities at Coyote Point	1 project/year	1 project/year
Department of Public Works (DPW) Bridge Maintenance (minor)	1 project/year	1 project/year
DPW Bridge Maintenance (scour counter measures)	3 projects/year	1 project/year
Parks Department Bridge Maintenance	4 projects/year	1 projects/year

Impact Analysis

In comparison to the proposed program, this alternative would reduce construction impacts associated with the proposed program including traffic delays, air emissions from operating construction equipment and haul truck trips, and construction noise. Similarly, this alternative may result in less near-term impacts on wetlands or jurisdictional waters and less temporary impacts on nesting birds and sensitive habitats as a result of reducing the number of maintenance projects and overall ground disturbance relative to the proposed program.

However, reducing the extent of maintenance projects completed on an annual basis could result in a greater need for other maintenance projects that get deferred. Environmental conditions at sites requiring bank stabilization/slip-out repair, culvert repair/replacement, sediment removal, or bridge maintenance but get deferred to a later time may worsen over time and become larger projects, potentially resulting in increased environmental impacts relative to the proposed program. Additionally, deferring such maintenance projects could

result in the need for emergency projects that tend to be addressed without adequate planning and occur during the wrong time of year (e.g., rainy season) when there is a greater likelihood for more severe construction impacts to occur on sensitive habitat, species, and/or water quality.

In addition, because less maintenance projects would occur under this alternative, Alternative 2 would have additional impacts such as increased flooding and public safety risks. For example, flooding risks may increase at some locations due to not clearing sediment from all culverts, channels and bridges; and increased flooding at roadside culvert failure sites that get deferred. Similarly, this alternative may result in greater erosion and further degraded water quality conditions at road slip-outs and/or streambank failures due to not addressing maintenance needs in a timely manner. Additionally, by deferring some road slip-outs and other maintenance needs along County roads, over time, roadway conditions may become more hazardous for motorists and impede emergency vehicle access.

5.4.3 ALTERNATIVE 3: NO HERBICIDE USE ALTERNATIVE

Characteristics of this Alternative

Alternative 3 would be similar to the proposed program except that no herbicides would be used for vegetation management. Although herbicides are used in limited locations to control invasive plants on County-owned parcels (e.g. a closed landfill and surrounding County-owned property in Pescadero, Half Moon Bay Airport, open space areas within County parks), other vegetation management methods such as hand removal, grazing, and mechanized equipment would be used in lieu of herbicides. All other maintenance activities described in Chapter 2, *Project Description,* would be conducted.

Impact Analysis

Although not identified as a significant impact, Alternative 3 would eliminate potential effects including accidental spills, chemicals and other risks associated with herbicide use.

This alternative would require additional vegetation management activities involving a combination of hand removal techniques and mechanized removal. Under Alternative 3, certain types of vegetation may be even more difficult to control without herbicides, resulting in persistent degraded habitat conditions. Because hand removal and mechanized vegetation removal techniques may not be as effective as herbicides, this alternative may also require the County to remove certain invasive plants on a more frequent basis. As such, an increase in use of mechanized vegetation removal techniques across a greater area and on a more frequent basis would result in greater air pollutant emissions and truck trips as this alternative would entail more maintenance worker trips and greater use of mowing and other mechanized equipment.

5.4.4 ALTERNATIVE 4: NO TIER 3 MAINTENANCE ACTIVITIES ALTERNATIVE

Characteristics of this Alternative

Under Alternative 4, the County would only conduct maintenance activities with a Tier 1 (No Impact) and Tier 2 (Low Impact) designation, as defined in Chapter 2, *Project*

Description. Tier 3 (Moderate/High Impact) maintenance activities would not be conducted under this alternative. As shown in Tables B-1 and B-2 of the Manual (Appendix A), 11 of DPW's maintenance projects and 4 of Parks Department maintenance activities/sites are considered potentially Tier 3. This alternative would thereby require less compensatory mitigation for effects on sensitive species and/or sensitive habitat. Note that the need for conducting Tier 3 maintenance activities would remain; however, such activities would need to be permitted by the County through a separate process. Like Alternative 2, this alternative would only partially meet program objectives described above in Section 5.4.1.

Impact Analysis

Because Tier 3 maintenance activities would be precluded, Alternative 4 would result in less severe biological resources effects, particularly on federally listed species and habitat supporting such species. Similar to Alternative 2, Alternative 4 would result in less air pollutant emissions, construction truck trips on local roads, and construction noise effects relative to the proposed program since less maintenance projects would be implemented.

However, by eliminating Tier 3 activities, the County would not fully meet program objectives pertaining to adequate maintenance of County channels, roads, and trails; preventing roadway flooding and reducing safety hazards; and repairing eroding streambanks and failing culverts in a timely manner. The County would need to pursue separate permits outside the Maintenance Program in order to conduct Tier 3 activities, which would require additional time and resources on the County's part. By permitting these activities on a separate track, environmental conditions may worsen at certain Tier 3 sites and could result in a greater need for maintenance, with expanded and more intensive intervention at the sites eventually. Tier 3 maintenance sites would potentially become larger projects, potentially resulting in increased environmental impacts in the future.

In addition, based on the County's past experience working on permits for other maintenance projects, if permitting Tier 3 projects is removed or delayed from the proposed program, then the opportunities to integrate beneficial mitigation approaches to address Tier 3 type projects in the near-term would not happen. As a result, when Tier 3 maintenance sites are eventually worked on, owing to worsening conditions at the site, the implementation of suitable mitigation would also be delayed compared to the mitigation provided for activities within the proposed program, which would be mitigated from the proposed program's outset. In addition, because the timing of implementing Tier 3 maintenance sites would be unknown if such projects are removed from the proposed program, there is less opportunity for the County to plan and integrate applicable requirements for meaningful or beneficial mitigation projects.

Similar to Alternative 2, because fewer maintenance projects would occur under the proposed program, Alternative 3 would have additional impacts associated with increased flooding and public safety risks due to not clearing sediment from culverts, channels and bridges designated as Tier 3; increased road slip-out/streambank failures due to lack of maintenance at Tier 3 sites where needed; and increased fire risk and other public safety risks due to limiting the amount of vegetation management conducted.

5.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Considering the issues described above, the proposed program is considered to be environmentally superior. In comparison to the alternatives, it provides the most appropriate balance among maintaining the functional integrity of County facilities, avoiding and minimizing impacts to the natural environment through detailed appraisals of habitat/resource conditions and prioritizing maintenance needs, and ensuring maintenance needs are addressed in a reasonable timeframe to prevent larger-scale and more intensive maintenance at a later time, including addressing larger slope failures and other emergency repairs and public safety hazards. By securing program-wide permits for the range of needed maintenance activities, the proposed program also enables work to occur in a more certain manner and can be scheduled over more months which enables improved work planning and implementation. Permitting maintenance activities individually typically results in scheduling uncertainty, and often a compressed and reduced construction period, where the maintenance work is forced into a few weeks at the end of the fall prior to the onset of the coming winter season. Conducting maintenance activities within a compressed construction window can create a more hurried and rushed atmosphere which typically does not result in work carried out in as careful a manner. One of the advantages of the proposed program is that it enables the County to schedule and implement the maintenance activities in the best possible manner.

Per State CEQA Guidelines Section 15126.6(e)(2), the following paragraphs compare the EIR alternatives and identify the environmentally superior alternative among the other alternatives.

Alternative 3 (No Herbicide Use) was not determined environmentally superior because it would not reduce any significant impacts associated with the proposed program. This alternative would be fairly similar to the proposed program and would avoid potential water quality impacts such as accidental spills and other impacts associated with herbicide use. Unlike Alternatives 2 and 4, no maintenance activities would be deferred such that environmental conditions (e.g. public safety hazards, fire risk, flooding risk) would worsen over time. Alternative 3 would, however, result in an incremental increase in truck trips and air pollutant emissions since this alternative would involve greater use of mechanized equipment for vegetation management purposes. Using mechanized equipment in some locations may not be as effective at controlling invasive or non-native vegetation, particularly in areas that are difficult to access. In conclusion, Alternative 3 was not deemed environmentally superior because it would not reduce impacts associated with the proposed program, would result in an incremental increase in vehicle emissions and greater use of mechanized equipment, and may not be as effective at controlling invasive/non-native vegetation.

The No Project Alternative, Reduced Maintenance Alternative (Alternative 2) and No Tier 3 Maintenance Activities Alternative (Alternative 4) involve different permitting mechanisms, which require the County permitting certain activities on a separate track outside of the Routine Maintenance Program. The No Project Alternative was not selected as the environmentally superior alternative because although it would provide a substantial reduction in maintenance of County facilities and thereby largely reduce construction-related impacts (e.g., emissions, noise, traffic, biological and cultural resources impacts) of the proposed program, it would likely result in a much greater need for eventual

maintenance projects that are larger and more complex than current conditions at certain sites. In addition, by not addressing maintenance needs in a timely manner, additional environmental impacts would increase including: increased flooding due to not clearing accumulated sediment in culverts and channels, increasing flooding due to roadside culvert failures, and greater water quality impacts by not addressing road slip-outs and streambank failures as quickly as they would under the proposed program.

Both Alternative 2 (Reduced Maintenance) and Alternative 4 (No Tier 3 Maintenance Activities) would reduce the number of maintenance projects completed in a given year, thereby resulting in less construction-related emissions, traffic on local roads, and other potential effects on biological and cultural resources. As discussed above, Alternatives 2 and 4 would also result in a more compressed implementation schedule which may result in maintenance activities being implemented in a hurried fashion and not benefit from the careful planning that would otherwise occur under the proposed program. Among the two alternatives, Alternative 4 would result in less adverse effects on biological resources by eliminating Tier 3 maintenance activities. Alternative 2 would, however, provide somewhat greater balance as this would provide the County flexibility in addressing Tier 3 maintenance sites through its maintenance prioritization process. As an example, in the event that a large eroded bank repair occurred in an area with greater biological resource sensitivity (Tier 3) and was identified as a higher priority maintenance project relative to Tier 1 or 2 sites, this particular activity could be covered under Alternative 2 and not undergo permitting delays that would otherwise likely occur under Alternative 4. Potential environmental impacts that would have otherwise occurred under Alternative 4 due to deferring maintenance (e.g. greater erosion and increased water quality degradation) would not occur under Alternative 2. For this reason, Alternative 2 is considered the environmentally superior alternative.

Chapter 6
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None cited.

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Chapter 3 Environmental Setting, Impacts, and Mitigation Measures

Section 3.1 Environmental Setting, Impacts, and Mitigation Measures

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Chapter 5 Alternatives

None cited.

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Chapter 7
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