Initial Study / Negative Declaration

City of Santa Cruz Routine Maintenance Project

MAY 2025

Prepared for:

CITY OF SANTA CRUZ
Public Works Department
809 Center Street, Room 201
Santa Cruz, California 95060

Prepared by:

DUDEK
725 Front Street, Suite 400
Santa Cruz, California 9506

City of Santa Cruz
NEGATIVE DECLARATION

The Administrator of Environmental Quality of the City of Santa Cruz has prepared this Negative Declaration for the following described project:

Project: City of Santa Cruz Routine Maintenance Project **Application No.:** Not Applicable

Project Location: Multiple locations in the City of Santa Cruz

Project Description: The City of Santa Cruz Routine Maintenance Project consists of routine maintenance activities along and within 27 publicly-maintained streams, wetlands, waterways, and adjacent habitats throughout the Santa Cruz city limits, including a location at the City's Resource Recovery Facility (RRF) that supports the City's landfill. The primary purpose of annual routine maintenance activities is to maintain adequate flood capacity and utility access, maintain existing stormwater and wastewater infrastructure, reduce fire fuel, remove non-native vegetation and remove debris from illegal encampments.

Applicant: City of Santa Cruz

Applicant Address: City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, CA 95060

The City of Santa Cruz Public Works Department has reviewed the proposed project and has determined that the Project, based on the Initial Study attached hereto, will not have a significant effect on the environment. An Environmental Impact Report is not required pursuant to the California Environmental Quality Act of 1970. This environmental review process and (Mitigated) Negative Declaration is done in accordance with the State CEQA Guidelines and the local City of Santa Cruz CEQA Guidelines and Procedures.

No mitigation measures will be incorporated into the Project or as conditions of approval.

5/21/25

Lee Butler
Administrator of Environmental Quality
City of Santa Cruz, California

Date

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
AB	Assembly Bill
AMBAG	Association of Monterey Bay Area Governments
AMM	avoidance and minimization measure
AQMP	Air Quality Management Plan
ASHCP	Anadromous Salmonid Habitat Conservation Plan
BMPs	best management practices
CAL FIRE	California Department of Forestry and Fire Protection
CAP	City of Santa Cruz Climate Action Plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
City	City of Santa Cruz
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CRLF	California red-legged frog
cy	cubic yards
dbh	diameter at breast height
DPM	diesel particulate matter
DPS	Distinct Population Segment
EA	environmental assessment
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESU	Evolutionarily Significant Unit
FCC	flood control channel
FESA	Endangered Species Act
FHSZ	fire hazard severity zone
FMMP	Farmland Mapping and Monitoring Program
GHG	greenhouse gas
GIS	Geographic Information System
ITP	Incidental Take Permit
LCP	Local Coastal Program
LSLRLRMP	Lower San Lorenzo River Lagoon and River Management Plan
MBARD	Monterey Bay Air Resources District
N_2O	nitrous oxide
NCCAB	North Central Coast Air Basin
NEPA	National Environmental Policy Act

Acronym/Abbreviation	Definition
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
O_3	ozone
OMHCP	Operations & Maintenance Habitat Conservation Plan
PG&E	Pacific Gas and Electric Company
$PM_{2.5}$	fine particulate matter
PM_{10}	coarse particulate matter
Project	Routine Maintenance Project
ROG	reactive organic gas
RRF	Resource Recovery Facility
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SLURP	San Lorenzo Urban River Plan
SO_2	sulfur dioxide
SO_x	sulfur oxides
SAA	Streambed Alteration Agreement
SSC	California Species of Special Concern
TAC	toxic air contaminant
UCSC	University of California, Santa Cruz
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles traveled

City of Santa Cruz
ENVIRONMENTAL CHECKLIST / INITIAL STUDY

I. Background

1. **Application No:** Not Applicable

2. **Project Title:** City of Santa Cruz Routine Maintenance Project

3. **Lead Agency Name and Address:**
   City of Santa Cruz
   809 Center Street, Room 201
   Santa Cruz, CA 95060

4. **Contact Person and Phone Number:** Filipina Warren, 831-420-5559
   fwarren@santacruzca.gov

5. **Project Location:** Multiple locations in the City of Santa Cruz

6. **Project Applicant's/Sponsor's Name and Address:**
   City of Santa Cruz Public Works Department
   809 Center Street, Room 201
   Santa Cruz, CA 95060

7. **General Plan Designation:** Multiple designations

8. **Zoning:** Multiple zone districts

9. **Other public agencies whose approval is required:**
   - California Department of Fish and Wildlife: Approval of Streambed Alteration Agreement

10. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1?** Yes

II. Project Description

Project Overview

The proposed Routine Maintenance Project (Project) consists of routine maintenance activities along and within 27 publicly-maintained streams, wetlands, waterways, and adjacent habitats throughout the Santa Cruz city limits, including a location at the City's Resource Recovery Facility (RRF) that supports the City's landfill. Figure 1 shows the City's regional location, and Figure 2 shows the locations of streams and water bodies subject to City maintenance that are undertaken annually by the City's Parks and Recreation and Public Works Departments. The primary purpose of annual routine maintenance activities is to maintain adequate flood capacity and utility access, maintain existing stormwater and wastewater infrastructure, reduce fire fuel, and remove non-native vegetation and illegal encampments.

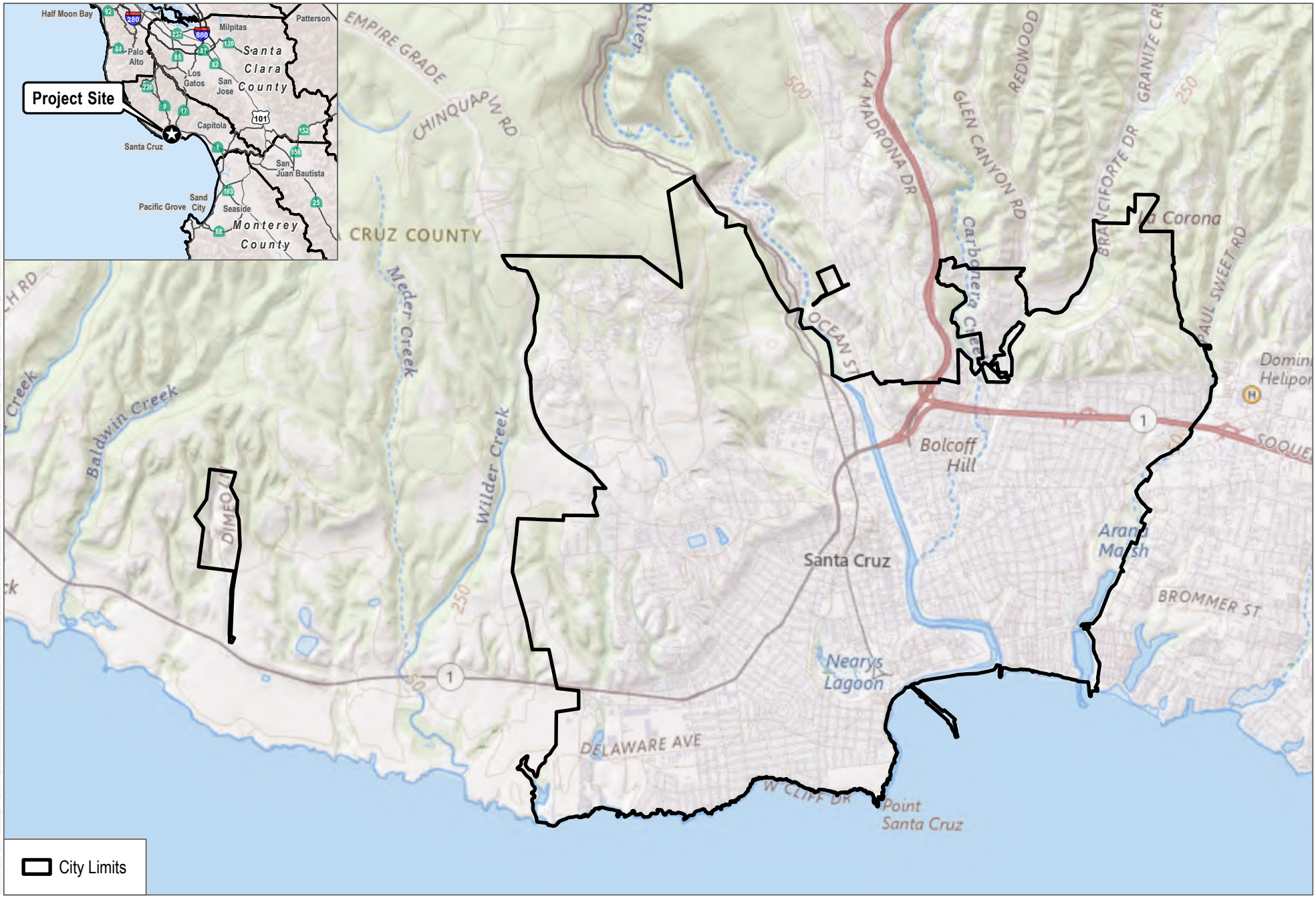
Annual Routine Maintenance Background

The City's Routine Maintenance Program has been implemented in the past with multi-year Streambed Alteration Agreements (SAAs) approved by the California Department of Fish and Wildlife (CDFW). The City of Santa Cruz conducted routine maintenance activities under SAA 1600-2013-0176-R3, which was approved in 2014, and expired at the end of 2018. In early 2019, CDFW approved an extension with additional conditions, which expired in December 2023. The City has submitted an application to CDFW for a new 5-year SAA that is under review by CDFW pending completion of review under the California Environmental Quality Act (CEQA)/

Not all streams are subject to maintenance in any one year, and typically maintenance activities occur with 5-10 streams in a given year. Review of maintenance activities conducted over the past six years indicates that approximately 2-7 locations have had maintenance activities completed in a given year. Typically, some vegetation management and channel disking in the San Lorenzo River is conducted annually. Table 1 summarizes the annual maintenance activities completed pursuant to the CDFW-approved SAAs from 2018 to 2023.

In addition, to comply with conditions of the SAA issued by CDFW, the City also is subject to regulatory compliance with other plans and/or agency requirements. Some routine maintenance activities are required measures and directives from the United States Army Corps of Engineers (USACE) to maintain the flood control capacity of the San Lorenzo River levees.

Some routine maintenance activities also are subject to provisions in the City's Operations and Maintenance Habitat Conservation Plan (OMHCP). In 2021, the U.S. Fish and Wildlife Service (USFWS) issued an incidental take permit (ITP) to the City of Santa Cruz under the authority of section 10(a)(1)(B) of the Federal Endangered Species Act (FESA) of 1973, as amended, for a period of 30 years. The issuance was based on the OMHCP that was developed with the USFWS. The HCP covers a six wildlife species and four plant species that may be impacted by a range of "covered activities" identified in the OMHCP. The City must comply with the provisions of the OMHCP, which include species-specific minimization and best management practices for covered activities.



SOURCE: USGS National Map 2025

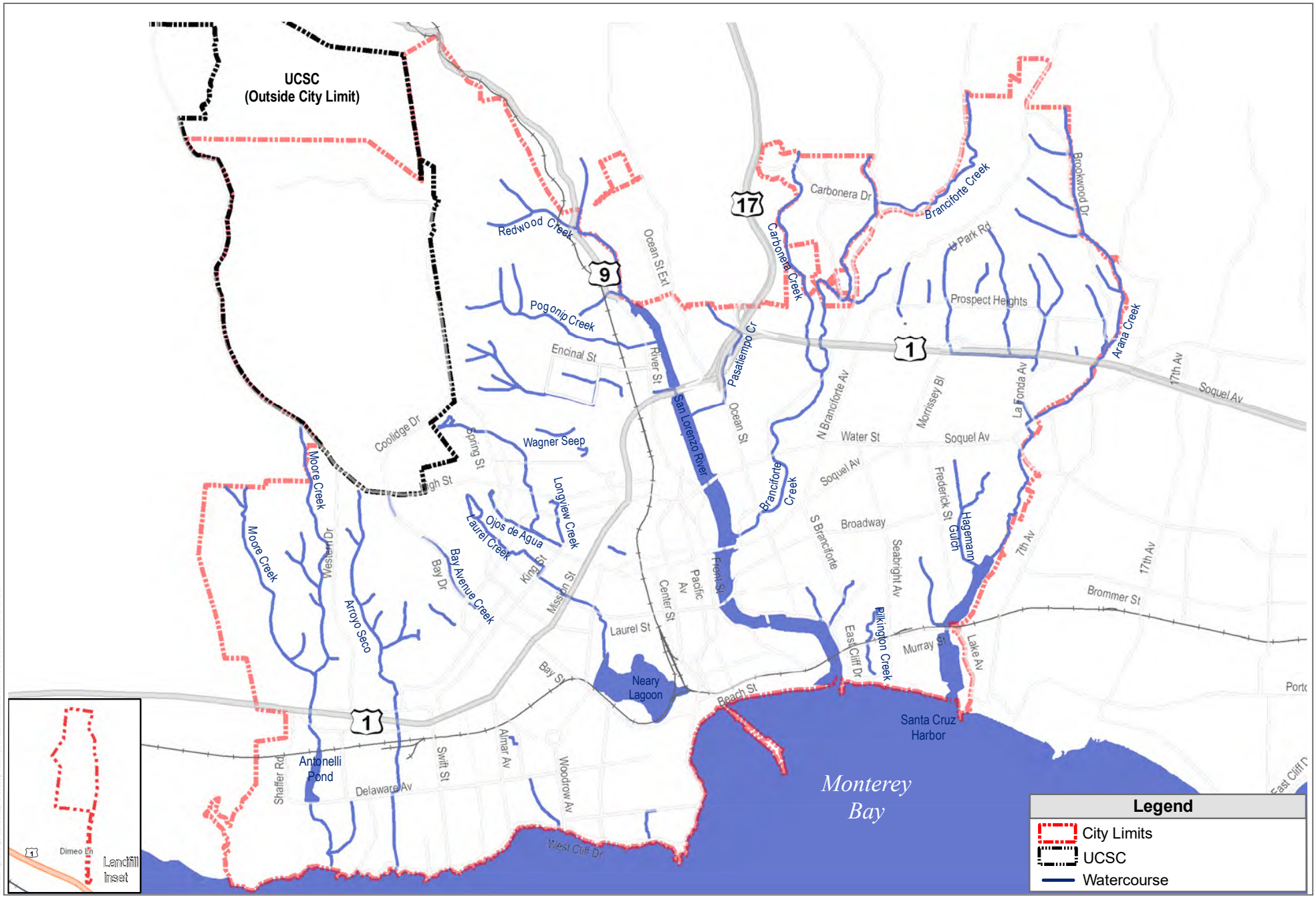
DUDEK

0 2,000 4,000 Feet

FIGURE 1

Regional Location

City of Santa Cruz Routine Maintenance Project



SOURCE: City of Santa Cruz

DUDEK

FIGURE 2

Major Waterways

City of Santa Cruz Routine Maintenance Project

TABLE 1. Summary of Annual Routine Maintenance Activities, 2018-2023

Year / Scheduled Locations	Maintenance Activities		
	Sediment Removal	Vegetation Removal	Other
2018			
▪ Dodero Creek		ü [4]	
▪ Pogonip Creek		ü	Channel [3]
▪ San Lorenzo River, Hwy 1-Laurel Street Bridge		ü [1]	Channel [2]
▪ Sycamore Grove		ü	
2019			
▪ San Lorenzo River, Hwy 1-Riverside Street Bridge		ü [1]	Channel [2]
2020			
▪ Jessie Street Marsh		ü (40-60 cy)	
▪ Neary Lagoon		ü	
▪ San Lorenzo River, Hwy 1-Riverside Street Bridge		ü [1]	Channel [2]
2021			
▪ Arana Creek	ü	ü	
▪ Bay Street Median			20 cy vegetation trimming
▪ Branciforte Creek	ü	ü	
▪ Hanover Creek	ü	ü	
▪ Jessie Street Marsh		ü (40-60 cy)	
▪ Neary Lagoon		ü	
▪ San Lorenzo River, Hwy 1-Riverside Street Bridge		ü [1]	Channel, Replanting [2, 5, 6]
2022			
▪ Branciforte Creek		ü	
▪ Pogonip Creek	ü [7]		
▪ San Lorenzo River, Hwy 1-Riverside Street Bridge		ü [1]	Channel, Replanting [2, 6]
2023			
▪ Bay Street Median			20 yds vegetation trimming)
▪ Bethany Curve			
▪ Jessie Street Marsh		ü (40-60 cy)	
▪ Neary Lagoon		ü	
▪ Pogonip Creek	ü [7]		
▪ San Lorenzo River, Hwy 1-Riverside Street Bridge		ü [1]	Channel [2, 5], 8, Replanting [6]
▪ Westlake Pond		ü	

[1] Annual vegetation management is prescribed within four management areas per Lower San Lorenzo River Lagoon & River Management Plan..

[2] Between Highway 1 and Water Street Bridge-loosen dry bed in flood control channel with tractor by approximately 2 feet to promote better scouring of riverbed during high flood events.

[3] Temporary channel for flood prevention.

[4] Non-native vegetation removal.

[5] Approximately 110,000 sf of dry channel was disked to promote better scouring for flood control.

[6] Planting of native species and removal of invasive and non-native plants along the San Lorenzo River levee.

[7] Sediment removal in culvert drainage.

[8] Debris removal at gravity outlet #8.

Included within the covered activities in the OMHCP are municipal facility operations and maintenance activities, including flood control maintenance, stormwater maintenance, emergency repairs and response, and vegetation management. These activities occur on City facilities and properties and include operation, rehabilitation, replacement, repair and maintenance of existing infrastructure and related facilities. The OMHCP is further explained in Section VI.4 of this document.

The Anadromous Salmonid Habitat Conservation Plan (ASHCP) was developed by the City in consultation with the National Marine Fisheries Service (NMFS) and CDFW in support of applications for federal and state ITPs for two salmonid fish species. Covered activities include flood and stormwater management and operation and maintenance of recreational and open space areas. The Conservation Strategy in the ASHCP includes Avoidance and Minimization Measures (AMMs) that eliminate or reduce effects of Covered Activities on Covered Species to the extent practicable. A Draft HCP has been prepared and was evaluated in an Initial Study/Mitigated Negative Declaration (MND); the MND was adopted by the City Council on January 23 2024. It is expected that the ASHCP and incidental take authorizations will be signed in August 2025. The ASHCP is further explained in Section VI.4 of this document.

Detailed Project Description

Maintenance Activities

The following activities are generally considered routine maintenance activities that may be conducted within streams, channels, catchment basins, ponds, storm drain lines, culverts, ditches, and lakes in a given year and are further described below:

- Removal of obstructions around structures and facilities
- Removal of sediment, vegetation and logs in channel beds
- Vegetation control on banks
- Planting of riparian vegetation
- Removal of invasive vegetation
- Repair of “hard” bank stabilization structures
- Maintenance of culverts
- Maintenance of existing stormwater and wastewater infrastructure
- Burrowing rodent management

1. **Removal of Obstructions around Structures and Facilities.** Activities include routine removal of fallen trees, branches, debris, rubbish, garbage, silt, gravel, sediment and vegetation from areas immediately adjacent to man-made structures and facilities. Sediment and vegetation removal around man-made structures and facilities will be conducted in the dry season (June 15-October 15). Removed sediment and cut vegetation would be hauled offsite to the City’s RRF or contractor location.

   Abatement of unsheltered population camps and removal of trash and other hazardous waste will be done year around. This preventative activity will be scheduled after routine inspections, as needed, and conducted during emergency responses if there is imminent damage to life, property, or public safety. Debris would be hauled offsite.

2. **Removal of Sediment, Vegetation and Logs in Channel Beds.** Activities include removal, displacement, and dredging of sand, silt, gravel, sediment, debris, logs, and associated vegetation from dry areas of the channel beds during the dry season to maintain channel capacity. Tule removal is also required periodically at Westlake Pond and the irrigation "reservoir" at DeLaveaga Golf Course. Tule removal may also be required at other locations. Tule removal is hauled offsite. This preventative activity would be routinely inspected and scheduled once a year, as needed, and conducted during emergency responses if there is imminent damage to life, property, or public safety.

3. **Vegetation Control on Banks.** Activities include removal of grasses and brush from banks for necessary maintenance, to maintain channel capacity, and as required for fire control. This preventative activity would be routinely inspected and scheduled once a year, as needed, and conducted during emergency responses if there is imminent damage to life, property, or public safety. Cut vegetation is chipped and hauled offsite.

4. **Planting of Riparian Vegetation.** Activities include planting native riparian vegetation by hand along banks of lakes and banks of their tributaries. Typically this activity will be done by hand throughout the year.

5. **Removal of Invasive Vegetation.** Activities include removal of non-native, invasive vegetation (Arundo, tree tobacco, castor bean, pampas grass, eucalyptus, acacia, broom, mattress vine, nasturtiums, Himalayan berry, etc.). This activity is scheduled one time per year with the vegetation management program for flood control. Cut vegetation is hauled offsite. The City of Santa Cruz operates under an Integrated Pest Management Program, and herbicides are not used in sensitive wetland and stream habitats for vegetation management.

6. **Repair of "Hard" Bank Stabilization Structures.** Activities include repair or replacement of damaged or failed sections of rock rip rap, gabion, geo cell, sacked concrete, concrete wall and/or cribwall bank revetments, vegetative and riparian planting, to maintain bank stabilization. This preventative activity will be routinely inspected and scheduled as needed, and conducted during emergency responses if there is imminent damage to life, property, or public safety

7. **Maintenance of Culverts.** Activities include routine maintenance or replacement of culverts. This preventative activity will be routinely inspected and scheduled, as needed, and conducted during emergency responses if there is imminent damage to life, property, or public safety.

8. **Maintenance of Stormwater and Wastewater Infrastructure**. Activities include the routine maintenance, repair and/or replacement of existing stormwater and wastewater infrastructure. Infrastructure facilities include: 1) wastewater mains(pipes), manholes, vaults, and cleanouts; and 2) stormwater mains(pipes), manholes, culverts, catch basins, inlets and outlets, and headwalls. Routine maintenance of existing wastewater infrastructure includes cleaning, hydro-jetting, flushing, lining, recoating, and/or painting of existing infrastructure. Lining or re-coating of stormwater infrastructure also is part of routine maintenance activities. In some instances repairs or replacement of infrastructure may be necessary.

9. **Burrowing Rodent Management.** Activities include performing burrowing rodent fumigation and grouting as a part of population control. This work would only be conducted on the San Lorenzo River levees, and would be conducted in accordance to specifications required by FEMA and USACE to maintain levee certification and structural support. Maintenance will be conducted on the water side (upper 20 feet of the water side slop, as measured from the edge of the paved levee path or to the top of the rip rap armoring, whichever is less) and on the land side (from edge of paved levee path to levee toe). Fumigation used will be carbon monoxide from a Pressurized Exhaust Rodent Controller (PERC) machine and the grout mixture will be a 9-parts cement to 1-part bentonite mixed with water. This preventative activity will be routinely inspected and scheduled every two years.

Waterways Subject to Routine Maintenance Activities

As indicated above, annual routine maintenance activities could occur at some of the identified 27 locations in a given year. The streams subject to annual maintenance include the those listed below, which are identified from the western to the eastern portion of the City; see Figure 2. A watercourse at the City's RRF and an irrigation reservoir at DeLaveaga Golf Course are also included in Project locations. The City's RRF is located approximately three miles west of City limits off of Highway 1 and serves as the City's primary solid waste management (landfill) and recycling facility. Table 2 summarizes the expected maintenance activity at each location included in the proposed Project, as well as, estimated annual volumes of sediment and vegetation removal that could occur in a given year. Figure 3 shows routine maintenance locations.

A. Moore Creek
B. Natural Bridges Creek
C. Arroyo Seco/ Meder Canyon
D. Delaware-Bethany Creek
E. Bay Creek
F. Jordan Gulch
G. Lighthouse
H. Laurel Creek
I. Dodero Creek
J. Ojas de Agua
K. Wagner Grove
L. Arroyo San Pedro
M. Pogonip Creek
N. San Lorenzo River
O. Branciforte Creek
P. Pasatiempo Creek
Q. Chrystal Gulch
R. Redwood Creek
S. Carbonera Creek
T. Jessie Street Marsh
U. Ocean Villa Creek
V. Pilkington Creek
W. Arana Gulch and Creek
X. Dog Leg Creek
Y. Hageman Gulch
Z. Lombardi Creek
AA. DeLaveaga Golf Course Irrigation Reservoir
BB. Westlake Pond

TABLE 2. Summary of Proposed Routine Maintenance Activities By Location

	Location	Description	Maintenance Frequency	Estimated Annual Removal (cubic yards)		Anticipated Maintenance Activities								
				Vegetation	Sediment	Remove Obstruction	Remove Sediment, Vegetation	Vegetation Control on Banks	Plant Riparian Vegetation	Remove Invasive Vegetation	Repair of "Hard" Bank Structures	Culvert Maintenance	Stormwater and Wastewater Infrastructure Maintenance	Burrowing Rodent Management
A.	Moore Creek	Maintenance specified in Moore Creek Preserve Interim Management Plan. Work scope includes maintenance of Antonelli Pond and upland tributaries and downstream locations towards West Cliff Drive. *Total linear feet within City limits: 28,000 feet* *Total area of impact in/around culverts and catch basins: 12,566 sq. ft.*	1-2 years	25	10	✓	✓	✓	✓	✓		✓		
B.	Natural Bridges	*Total linear feet within City limits: 1,800 feet* *Total area of impact in/around culverts and catch basins: 2,500 sq. ft.*	As needed	10	5	✓	✓	✓	✓	✓		✓		
C.	Arroyo Seco / Meder Canyon	Work scope includes maintenance of downstream locations heading towards West Cliff Drive. *Total linear feet within City limits: 14,900 feet* *Total area of impact in/around culverts and catch basins: 28,760 sq. ft.*	Annually	30	15	✓						✓	✓	
D.	Delaware-Bethany Creek	Routine maintenance and ongoing native plant revegetation. *Total linear feet within City limits: 2,012 feet* *Total area of impact in/around culverts and catch basins: 10,700 sq. ft.*	As needed	15	5	✓	✓	✓	✓	✓		✓	✓	
E.	Bay Creek	*Total linear feet within City limits: 2,881 feet* *Total area of impact in/around culverts and catch basins: 14,660 sq. ft.*	1-2 years	20	5	✓	✓	✓	✓	✓		✓		
F.	Jordan Gulch	*Total area of impact of in/around the culverts and catch basins: 2,500 sq. ft.*	As needed	10	5	✓		✓	✓	✓		✓		
G	Lighthouse (ditch)	Maintenance outlined in Lighthouse Field State Beach General Plan. *Total linear feet within City limits: 975feet* *Total area of impact in/around culverts and catch basins: 1,256 sq. ft.*	As needed	1	1	✓						✓		
H.	Laurel Creek	Routine maintenance outlined in the Neary Lagoon Management Plan. Work scope includes maintenance needed at Laurel Creek at Escalona Drive (culvert). *Total linear feet within City limits: 6,000 feet* *Total area of impact in/around culverts and catch basins: 33,096 sq. ft.*	Annual	20	10	✓	✓			✓				
I.	Dodero Creek	*Total linear feet within City limits: 5,324 feet* *Total area of impact in/around culverts and catch basins: 17,226 sq. ft.*	As needed	5	5	✓						✓		
J.	Ojas de Agua	*Total linear feet within City limits: 2,307 feet* *Total area of impact in/around culverts and catch basins: 7,540 sq. ft.*	1-2 years	5	5	✓						✓		
K.	Wagner Grove (ditch)	*Total linear feet within City limits: 975 feet* *Total area of impact in/around culverts and catch basins: 1,684 sq. ft.*	As needed	5	5	✓						✓		
L.	Arroyo San Pedro	*Total linear feet within City limits: 10,177 feet* *Total area of impact in/around culverts and catch basins: 20,093 sq. ft.*	1-2 years	25	10	✓						✓		
M.	Pogonip Creek	Maintenance outlined in Pogonip Open Space Master Plan. Sediment is removed from the 48-inch pipe is located under the railroad tracks and the daylights downstream towards the San Lorenzo River. *Total linear feet within City limits: 8,011 feet* *Total area of impact in/around culverts and catch basins: 1,256 sq. ft.*	1-2 years	25	10	✓	✓			✓				

TABLE 2. Summary of Proposed Routine Maintenance Activities By Location

	Location	Description	Maintenance Frequency	Estimated Annual Removal (cubic yards)		Anticipated Maintenance Activities								
				Vegetation	Sediment	Remove Obstruction	Remove Sediment, Vegetation	Vegetation Control on Banks	Plant Riparian Vegetation	Remove Invasive Vegetation	Repair of "Hard" Bank Structures	Culvert Maintenance	Stormwater and Wastewater Infrastructure Maintenance	Burrowing Rodent Management
N.	San Lorenzo River	The San Lorenzo River downstream of the City of Santa Cruz Tait Street Diversion/Sycamore Flats area requires annual maintenance as required by the Army Corps of Engineers. Maintenance standards are outlined in the US Army Corps Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) Manual, San Lorenzo Urban River Plan (SLURP) and San Lorenzo River and Lagoon Management Plan (SLRLMP), which is included as an appendix in the SLURP. The estimated acreage is 71.3 acres. Gravity outlets vary in size from 12'x14'x6' to 9'x9'x4' along the levee and are cleared either by hand or heavy equipment during low flow. An estimated vegetated buffer of 10ft-15ft from the wetted edge will be maintained. Debris (such as down trees) are cut and remain in place. Cut vegetation is processed (chipped) and hauled offsite annually. Sediment is tilled and remains in place. Any removal is done via natural river flow. Equipment (hand tools and mowers) are used for cutting vegetation, and tracked equipment are used to move large obstructions or to till dry channel bed to promote scouring during high flow events for flood control purposes. The Vegetation Management Prescriptions for the San Lorenzo River are provided in XXXXXX. *Total linear feet within City limits: 17,800 feet* *Total area of impact in/around culverts and catch basins: 10,053 sq. ft.*		100		✓	✓	✓	✓	✓	✓	✓		✓
O.	Branciforte Creek	Maintenance as required by the Army Corps of Engineers in the concrete flood control channel. Maintenance includes the Lower DeLaveaga Park and DeLaveaga Armory areas and towards Brookwood Drive. The concrete flood control channel is estimated at 4.2 acres, 5,250 linear feet and averages 35 feet wide. Volume of removal varies annually, as needed, and approximately 800 feet is accessible by a long reach excavator to remove vegetation and sediment in the concrete channel. *Total linear feet within City limits: 20,205 feet* *Total area of impact in/around culverts and catch basins: 31,926 sq. ft.*		25	10	✓	✓	✓		✓	✓	✓		
P.	Pasatiempo Creek	*Total linear feet within City limits: 4,353 feet* *Total area of impact in/around culverts and catch basins: 12,566 sq. ft.*	As needed	5	5	✓	✓					✓		
Q.	Chrystal Gulch (swale	*Total linear feet within City limits: 531 feet* *Total area of impact in/around culverts and catch basins: 2,513 sq. ft.*	As needed	5	5	✓						✓	✓	
R.	Redwood Creek	Maintenance outlined in the Pogonip Open Space Master Plan. *Total linear feet within City limits: 3,890 feet* *Total area of impact in/around culverts and catch basins: 1,256 sq. ft.*	As needed	10	5	✓	✓	✓		✓		✓		
S.	Carbonera Creek	*Total linear feet within City limits: 6,850feet* *Total area of impact in/around culverts and catch basins: 9,767 sq. ft.*	Annually	10	10	✓	✓					✓		
T.	Jessie Street Marsh	Maintenance required by Jessie Street Marsh Management Plan. *Total linear feet within City limits: 1,297 feet* *Total area of impact in/around culverts and catch basins: 3,770 sq. ft.*		60	10	✓		✓		✓				
U.	Ocean Villa Creek	*Total linear feet within City limits: 1,702 feet* *Total area of impact in/around culverts and catch basins: 10,125 sq. ft.*	1-2 years	25	10	✓	✓					✓	✓	

TABLE 2. Summary of Proposed Routine Maintenance Activities By Location

	Location	Description	Maintenance Frequency	Estimated Annual Removal (cubic yards)		Anticipated Maintenance Activities								
				Vegetation	Sediment	Remove Obstruction	Remove Sediment, Vegetation	Vegetation Control on Banks	Plant Riparian Vegetation	Remove Invasive Vegetation	Repair of "Hard" Bank Structures	Culvert Maintenance	Stormwater and Wastewater Infrastructure Maintenance	Burrowing Rodent Management
V.	Pilkington Creek	Vegetation maintenance needed for Monterey Bay Sanctuary Scenic Trail Segments 8 and 9 with ongoing native plant revegetation. *Total linear feet within City limits: 2,240 feet* *Total area of impact in/around culverts and catch basins: 18,709 sq. ft.*	1-2 years	25	10	✓	✓					✓	✓	
W.	Arana Gulch and Creek	Maintenance as required in the Arana gulch Greenbelt Interim Management Plan in the south and by the DeLaveaga Park master Plan in the north and as needed in those areas outside the management plan areas, including canyon locations around the DeLaveaga Golf Course. *Total linear feet within City limits: 43,363 feet* *Total area of impact in/around culverts and catch basins: 78,124 sq. ft.*		40	20	✓	✓	✓		✓		✓	✓	
X.	Dog Leg Creek	Maintenance as required in the Ara Gulch Greenbelt Interim Management Plan. *Total linear feet within City limits: 1,986 feet* *Total area of impact in/around culverts and catch basins: 4,768 sq. ft.*		10	5	✓	✓	✓		✓		✓		
Y.	Hageman Gulch	Maintenance as required by the Arana gulch Greenbelt Interim Management Plan. Work scope includes maintenance need at Mentel Avenue and Hanover Street stormwater infrastructure. *Total linear feet within City limits: 4,615 feet* *Total area of impact in/around culverts and catch basins: 6,283 sq. ft.*		40	10	✓	✓	✓				✓	✓	
Z.	Lombardi Creek	Located at the City of Santa Cruz Resource Recovery Center and requires regular maintenance of the outfall. The total linear feet within City limits and the area of impact for routine maintenance is 5480sq ft. Volume of removal varies annually, as needed. Estimated annual maintenance of culvert includes removal of approximately 1 cubic yard of vegetation and 5 cubic yards of sediment. Approximately every 4-6 years the West Canyon Pond and North Canyon Pond are dredged, removing up to total of combined dredged material up to 1100 cubic yards in the West Canyon Pond and 750 cubic yards in the North Canyon Pond.	4-6 years	1	5	✓	✓	✓	✓	✓		✓		
AA.	DeLaveaga Golf Curse Irrigation Reservoir	This man-made reservoir is located at the City's municipal golf course. All tules to be removed based on the review and approval of a qualified biologist. The total linear feet within City limits and area of impact for routine maintenance is 860 ft or approximately 66,322sq ft. This location has an estimated 40-60 yards of nonnative bank broom and brush to be pruned from the slope of the water, no root removal will occur. Estimated volume of tule vegetation removed is 10 cubic yards and they are cut below the waterline by hand or the matting is removed mechanically to increase pond capacity and limit overgrowth and sedimentation of the pond with tules. Tules are not removed exceeding 10% of tule volume. Maintenance includes repair of pond equipment as needed and minor sediment removal.				✓	✓			✓				
BB.	Westlake Pond	This man-made pond is located at Westlake Park and drains into Laurel Creek and Neary Lagoon. Routine maintenance includes removal of tule, repair of pond equipment as needed and minor sediment removal		✓	✓								✓	

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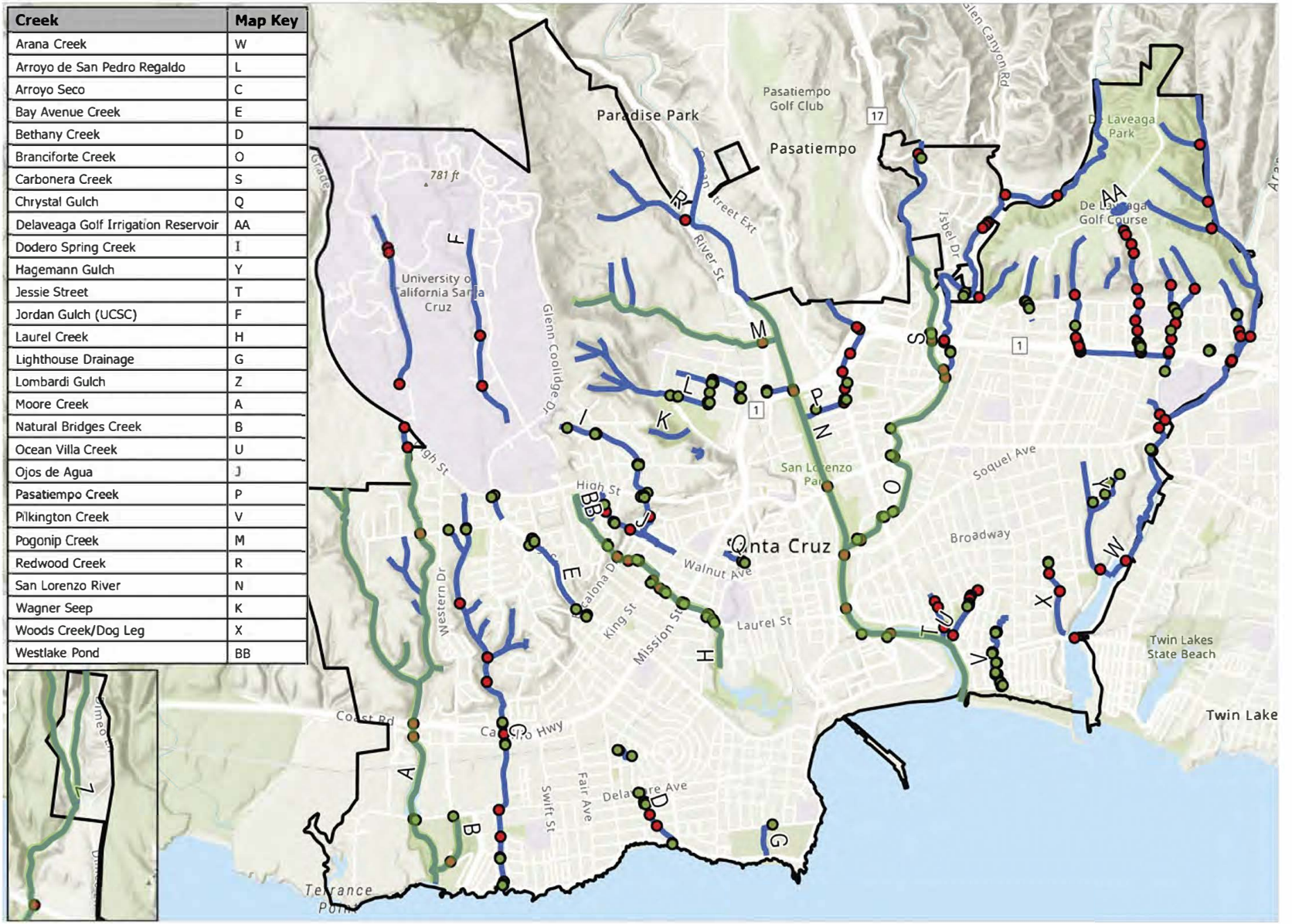
Creek	Map Key
Arana Creek	W
Arroyo de San Pedro Regaldo	L
Arroyo Seco	C
Bay Avenue Creek	E
Bethany Creek	D
Branciforte Creek	O
Carbonera Creek	S
Chrystal Gulch	Q
Delaveaga Golf Irrigation Reservoir	AA
Dodero Spring Creek	I
Hagemann Gulch	Y
Jessie Street	T
Jordan Gulch (UCSC)	F
Laurel Creek	H
Lighthouse Drainage	G
Lombardi Gulch	Z
Moore Creek	A
Natural Bridges Creek	B
Ocean Villa Creek	U
Ojos de Agua	J
Pasatiempo Creek	P
Pilkington Creek	V
Pogonip Creek	M
Redwood Creek	R
San Lorenzo River	N
Wagner Seep	K
Woods Creek/Dog Leg	X
Westlake Pond	BB



SOURCE: City of Santa Cruz

DUDEK

FIGURE 3

Routine Maintenance Project Locations

City of Santa Cruz Routine Maintenance Project

Maintenance Techniques and Equipment

Hand tools and rubber-tracked heavy equipment would primarily be used to complete the proposed maintenance activities, including weed whackers, brush cutters, chain saws, and rubber-tracked skid steer/mini excavator. A self-propelled aquatic vessel, known as an aquamog, would be used for tule removal in Westlake Pond and the irrigation pond at DeLavega Golf Course. Table 3 summarizes equipment that typically would be used for each proposed routine maintenance activity. The City operates under an Integrated Pest Management Program, and herbicides are not used for vegetation management in sensitive wetlands and streams.

TABLE 3. Summary of Equipment Used for Routine Maintenance Activities

Maintenance Activity	Equipment Uses
1. Removal of Obstructions around Structures and Facilities	Hand crews, mechanized hand tools and equipment, rubber tracked heavy equipment
2. Removal of Sediment, Vegetation and Logs in Channel Beds	Hand crews, mechanized hand tools and equipment, rubber tracked heavy equipment, and aquamog (self-propelled aquatic vessel) for tule removal only
3. Vegetation Control on Banks	Hand crews, hand tools and equipment, motorized push mower
4. Planting Riparian Vegetation	Hand crews, hand tools
5. Removal of Invasive Vegetation	Hand crews, hand tools and mechanized equipment
6. Repair of "Hard" Bank Stabilization Structures	Hand crews, mechanized hand tools, rubber tracked heavy equipment
7. Maintenance of Culverts	Hand crews, hand tools, rubber tracked heavy equipment
8. Maintenance of existing stormwater and wastewater infrastructure	Hand crews, hand tools, mechanized hand tools and equipment, rubber tracked heavy equipment
9. Burrowing Rodent Management	Hand tools, carbon monoxide from a PERC machine, low-flow grout mixture

Best Management Practices

The Project incorporates Best Management Practices (BMPs) that are routinely implemented as part of the annual routine maintenance activities and/or required to be implemented by other City-adopted plans and approved HCPs to protect special-status species and sensitive habitats and prevent habitat and water quality degradation. The Project BMPs, which are included in Table 4, draw from the requirements in the following plans, as well as the measures that have been required by approved SAAs and/or are already implemented as part of the City's routine maintenance activities:

- Lower San Lorenzo River and Lagoon Management Plan (LSLRLMP) adopted by the City of Santa Cruz in 2002, which includes annual vegetation management prescriptions for the San Lorenzo River
- Citywide Creeks and Wetlands Management Plan adopted by the City in 2006 and approved by the California Coastal Commission as part of the City's Local Coastal Program

(LCP) in 2008, which include BMPS and other measures for protection of streams and associated riparian habitat.

- City of Santa Cruz OMHCP and ITP authorization in 2021, which covers some operations and maintenance activities conducted on public lands.
- City of Santa Cruz ASHCP, which includes measures to protect federally listed salmonid fish species and covers some Citywide operations and maintenance activities; final authorization has not yet been received by the City.

Routine Maintenance Schedule

The majority of routine maintenance activities would be conducted between June 15 and October 15 of each year, but could start May 15 and be extended to October 31 under circumstances specified in the SAA approved by CDFW. Abatement of unsheltered population camps and trash would be conducted year round, and burrowing rodent management would be conducted between January 1 and October 15, or to October 31 during the dry season with CDFW authorization.

Maintenance locations and activities to be completed in a given year would be determined each year based on need and dependent on budget constraints and time parameters. As previously indicated, not all streams are subject to maintenance in any one year, and typically maintenance activities occur with 5-10 streams in a given year.

Notification and reporting requirements would be performed as specified in CDFW's SAA. Annual written notification of proposed routine maintenance activities to be performed in a given year would be provided to CDFW by May 1 of each year, including the following for each location: the described project location; length, width and square footage of the maintenance area; potential presence of sensitive species; and avoidance and minimization measures and BMPs to be implemented. Annual written notification of completed projects within the year would be submitted by December 31.

TABLE 4. Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
General			
1	Routine maintenance work shall be conducted from June 15 to October 15, except work within seasonally dry stream channels may be allowed between May 15 and June 14, and work may be extended to October 31 during dry seasons with CDFW written concurrence.	All work, except abatement of unsheltered population camps and trash would be conducted year round, and January 1 to May 31 for burrowing rodent management	RMP ASHCP-LM17 CDFW
2	Conduct activities outside of the wetted channel whenever feasible by timing work to the low flow season or by utilizing equipment or methods that do not require access or equipment in the channel. No equipment shall be operated in wetted areas of a stream (including flowing or ponded water) at any time, except as may be necessary to construct coffer dams to divert stream flow and isolate the work site when replacing culverts.	Work around water bodies	RMP ASHCP-WO1 CDFW
3	Routine maintenance activities within stream and riparian corridor shall be restricted to daylight hours during dry weather periods.	Activities within stream and riparian corridor	RMP CDFW
4	Staging areas shall be located at least 30 feet from the top of bank or on the outboard side of levees.	Activities within stream and riparian corridor	CDFW
Special-Status Species and Habitat Protection			
5	A qualified biologist shall conduct a survey within and adjacent to proposed routine maintenance work areas within 48 hours prior to start of work in areas identified as having potential habitat for special-status species, including California red-legged frog (CRLF), northwestern pond turtle (NWPT), San Francisco dusky-footed woodrat (SFDFW), and special-status bat species, in accordance with any applicable agency protocols. A qualified botanist shall conduct appropriately timed special-status plant surveys prior to vegetation removal activities at the appropriate period when these species are evident and identifiable.	Locations with potential special-status species as specified in Biological Resources Review	RMP OMHCP SSM-12, 21, 27 ASHCP-WO1 CDFW
6	If CRLF are detected during the preconstruction survey, maintenance activities shall not commence until after May 30. If CRLF are detected during Project activities, all vehicles in the work area shall be inspected for frogs prior to moving those vehicles and any vegetation removed shall be placed directly into a disposal vehicle and not be stockpiled onsite. Implement CRLF monitoring and relocation, if needed, by a U.S. Fish and Wildlife (USFWS)-approved biologist in accordance with OMHCP SSM-11 through SSM-19.	All maintenance activities at locations with identified CRLF habitat	OMHCP SSM-11 through 19 CDFW

[1] See notes at end of table for explanation.

TABLE 4. Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
7	If NWPT is observed during preconstruction surveys, it shall be left to move out of the area on its own. If it does not leave on its own, a qualified biologist can relocate it to suitable habitat at least 300-ft away from the Project. If a NWPT nest is found, all Project activities shall cease, and the City shall contact CDFW for specific avoidance and minimization measures. Implement NWPT monitoring and relocation, if needed, by a U.S. Fish and Wildlife (USFWS)-approved biologist in accordance with Operations and Maintenance OMHCP SSM-11 through SSM-19.	All maintenance activities at locations with identified NWPT habitat	OMHCP SSM-20 through 26 CDFW
8	A qualified biologist shall conduct a focused survey for roosting bats seven days prior to commencement of any maintenance activity involving disturbance to vegetation or culverts. Roosting habitat features shall be flagged or marked for avoidance. If any of the identified roosting habitat features will be altered or disturbed by maintenance activities, City shall contact CDFW for further guidance. Any attempt to directly disturb (e.g., shake, prod) roosting features is prohibited. If individual bats or colonies are detected during the survey, CDFW shall be notified immediately	Work sites where culverts and/or trees would be removed or disturbed for a period of more than 2 hours	CDFW
9	Any San Francisco dusky-footed woodrat (SFDFW) midden found in a maintenance area shall be protected with establishment of flagging or a fence barrier surrounding the nest site and avoided. A minimum distance of 25 feet shall be used for the no-disturbance buffer protecting the midden. If SFDFW middens cannot be avoided, the City shall submit a SFDFW Midden Relocation Plan to CDFW for approval.	All maintenance activities at locations with identified woodrat middens	CDFW
9	Conduct pre-construction nesting bird surveys within 7 days of maintenance activities if specified activities occur between February 1 and August 31, and if nesting species are present, buffers shall be established in accordance with CDFW requirements.	Activities within or adjacent to riparian corridors, including tree trimming or removal, mowing, and sediment removal	RMP CDFW CCWMP
10	Conduct an education program for all persons working on a maintenance activity by a CDFW-approved qualified biologist in accordance with CDFW requirements. This training will include a presentation of the potential for sensitive species to occur at the site and measures to protect habitat including aquatic habitat and avoid impacts to the species.	All maintenance activities	RMP OMHCP GM-4, SSM-12, 22 CDFW
11	Prior to the start of Project activities, a qualified biologist shall clearly mark/flag or erect temporary construction fencing to designate the work area and to delineate the areas that shall be avoided. Sensitive habitat areas, including special-status plant species population boundaries	Locations specified in Biological Resources Review	OMHCP-SSM-1 CDFW

TABLE 4. Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
	or critical habitat and identified nesting bird locations, shall be demarcated in consultation with a qualified biologist, to avoid impacts to protected species and sensitive habitat. The boundaries shall be inspected on a regular basis to ensure that work has remained within the marked boundaries, and flagging and/ or temporary construction fencing shall be removed immediately after the completion of maintenance work.		
12	A qualified biologist or biological monitor shall be present during maintenance activities where special-status species have been documented or are likely to occur, and as recommended upon completion of the pre-construction biological surveys.	Locations and activities specified in Biological Resources Review	ASHCP-LM-21 CDFW
13	The spread or introduction of invasive, non-native plant species will be avoided to the extent practicable as specified in the City's Operations and Maintenance HCP (GM-3). Invasive plant material shall be disposed of offsite.	All locations	OMHCP-GM-3 CDFW
14	Any aquatic nonnative invasive species found shall be disposed of properly and shall not be placed back into the creek where work is being conducted or any other drainages, creeks or streams.	All locations	CDFW
Erosion Control and Water Quality Protection			
15	All refueling, maintenance, and staging of equipment and vehicles will occur at least 65 feet from any riparian habitat or water body. The City will ensure contamination of habitat does not occur during such operations.	Activities within 65 feet of channel	RMP ASHCP-WO13 OMHCP-GM-2 CDFW
16	Provide regular maintenance and inspection of equipment to prevent leaks. Any equipment or vehicles driven and/or operated adjacent to the stream shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat.	All activities involving equipment	RMP CDFW
17	Prior to the onset of work, the City will ensure that the contractor has prepared a plan to allow a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.	All locations	OMHCP-GM-2
18	Install erosion control as necessary, including silt fences, straw wattles, native duff, straw, jute netting, to protect and stabilize exposed soils upon completion of maintenance to prevent erosion into the stream channel.	Culvert maintenance, sediment removal	ASHCP-LM-11 OMHCP-GM-10 CDFW
19	Install erosion control measures for surface stabilization following culvert removal (straw, seed, straw rolls, blankets, etc.), and replant the disturbed area with native species, particularly conifer and riparian species.	Culvert maintenance	ASHCP-LM-13

TABLE 4. Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
Flood Control Maintenance			
20	Only remove material that creates a hazard to life, property, infrastructure, or public safety.	Debris/obstruction removal	RMP ASHCP-MF-1
21	Embedded pieces of large woody debris or stumps that potentially serve as basking sites or that encourage pool formation shall be left in place if it does not obstruct the flow of water and there is adequate flood flow capacity.	Debris/obstruction removal	RMP CDFW
22	Whenever possible leave natural habitat-forming material in the stream by moving it downstream of structures to be protected or cutting larger material into smaller segments that may float downstream in larger flows, as long as these segments retain habitat forming characteristics.	Debris/obstruction removal	ASHCP-MF-3
23	Allow retention of up to 3-foot square root wads in the channel every 500 feet for habitat value, provided there are no undesirable changes in channel hydraulics and provided such root wads do not show signs of developing into larger log jam structures in the future.	Debris/obstruction removal	ASHCP-MF-4
24	Conduct sediment removal only as necessary to maintain and/or restore capacity of stormwater conveyance facilities or to prevent flood events; define sediment removal areas in the San Lorenzo River flood control channel (FCC) by cross section and HEC-6 analysis.	Flood control sediment management/removal	RMP ASHCP-MF-5
25	Conduct annual surveys to identify vegetation characteristics and sediment aggradation within the San Lorenzo River FCC between Highway 1 and Soquel Avenue, and in the Branciforte Creek FCC.	Flood control sediment management/removal	RMP ASHCP-MF-7
26	Do not conduct sediment removal in San Lorenzo River FCC downstream of Laurel Street, except for sediment removal around gravity outlets when water is not present.	Flood control sediment management/removal	ASHCP-MF-10
27	In the San Lorenzo River FCC, maintain a minimum of a 5-foot vegetation no-work buffer along both sides of the wetted channel where sediment removal activities will not occur.	Flood control sediment management/removal	ASHCP-MF-8
Vegetation Management			
28	Conduct vegetation management late in the dry season, preferably August, except September 1-October 15 in San Lorenzo River, with extension to October 31 in all Project locations with CDFW approval.	Vegetation management	ASHCP-MF-13
29	The disturbance or removal of vegetation shall not exceed the minimum necessary to accomplish maintenance needs. No removal of vegetation within 10 feet of an active channel shall occur in waterways supporting salmonids.	Vegetation management	CDFW
30	Avoid vegetation management in the wetted channel to the maximum extent practicable.	Vegetation management	ASHCP-MF-12

TABLE 4. Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
31	Do not remove mature riparian trees except in the San Lorenzo River FCC and Branciforte Creek FCC; riparian shrubs may be trimmed from ground level up to 6-8 feet in height. Remove cuttings from the work area and recycle as green waste at the landfill or chip and haul offsite.	Vegetation management	ASHCP-MF-11
32	Selectively remove riparian vegetation along the San Lorenzo River that could possibly undermine the stability of the levees or exceeds accepted Army Corps of Engineers' "Manning's n roughness coefficient" for the FCC. Retain a minimum 5-foot vegetated buffer on either side of the wetted channel.	Vegetation management	ASHCP-MF-14
33	Except along the San Lorenzo River, no trees (native or non-native) over four (4) inches diameter at breast height (DBH) shall be removed without written approval from CDFW and shall be replaced at a 1:1 ratio.	Vegetation management	CDFW
34	In the San Lorenzo River reach from Highway 1 to Water St., allow 10-foot-wide strip of willow and alder along toe of levee. Willows are allowed to grow to 3 inches dbh; alders allowed to grow to 6 inches dbh. Trim lower limbs of the alder trees to reduce flood impacts. Thin willows to favor providing overhanging cover to the low flow channel. Maintain a 5-foot buffer along wetted edges of channel, but thin groves and limb-up trees. Remove any trees in 5-foot buffer area that are greater than 6 inches dbh.	Vegetation management	ASHCP-MF-15 LSLRLMP
35	In the San Lorenzo River reach from Water St. to Laurel St. maintain a 10-foot-wide strip of woody riparian vegetation and tules and cattails on the west bank. Maintain east bank to keep trees overhanging water. Trees or branches that fall in the water may be left, cut into smaller pieces, or removed entirely if they cause an immediate safety hazard. Maintain sandbars to allow volunteer groves to establish but remove all trees greater than 6 inches dbh.	Vegetation management	ASHCP-MF-16 LSLRLMP
36	In the San Lorenzo River reach downstream of Laurel St. maintain a 5-foot-wide strip of willow, cattail and tule at the levee toe. Willows will be maintained with stem diameter of no greater than 0.5 inches and be limbed-up and periodically thinned to create defined groves.	Vegetation management	ASHCP-MF-17 LSLRLMP

NOTES:
ASHCP-Included in Draft Anadromous Salmonid Habitat Conservation Plan
CDFW-Typically required by CDFW
CCWMP-Included in Citywide Creeks and Wetlands Management Plan
LSLRLMP-Included in Lower San Lorenzo River & Lagoon Management Plan
OMHCP-Included in City of Santa Cruz Operations and Management Habitat Conservation Plan
RMP-Typically conducted by City as part of routine maintenance

III. Environmental Setting

There are 39 miles of watercourses and numerous wetland areas in the City. The proposed Routine Maintenance Project includes 27 watercourses within six primary watersheds and four other watercourses, including Lombardi Creek at the Santa Cruz RRF. The primary watershed areas include: San Lorenzo River, Arana Gulch Creek, Neary Lagoon, Arroyo Seco, and Moore Creek, as well as the Baldwin/Wilder watershed that supports Lombardi Creek. In addition there are several other miscellaneous drainages that do not fall within these primary watersheds including Natural Bridges Creek, Lighthouse Drainage, Pilkington Creek and Bethany Creek. Table 5 summarizes the watersheds of the watercourses subject to routine maintenance activities.

TABLE 5. Summary of City Watersheds

Watershed	Watercourses Included	Known Wetlands
San Lorenzo River Watershed	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek Arroyo de San Pedro Regaldo Wagner Grove Pasatiempo Creek Jessie Street Channel	 Salz Pond Jessie Street Marsh
Arana Gulch Creek Watershed	Arana Gulch Creek Hagemann Creek Woods-Dog Leg Creek	
Neary Lagoon Watershed	Laurel Creek Bay Avenue Creek Chrystal Gulch Dodero Spring Creek Jordan Gulch* Ojas de Agua Creek	Westlake Pond Neary Lagoon Kalkar Quarry Spring
Arroyo Seco Watershed (Westside Watershed)	Arroyo Seco Creek	
Moore Creek Watershed	Moore Creek	Antonelli Pond
Baldwin/Wilder Watershed	Lombardi Creek	
Other Watercourses	Bethany Creek Lighthouse Drainage Natural Bridges Creek Pilkington Creek	

* From the University of California Santa Cruz (UCSC) campus, Jordan Gulch drains into a spring-fed channel down Bay Street. None of the proposed routine maintenance activities would be conducted at UCSC.

A brief overview of the conditions of these major drainages is provided below based on information provided in the City's adopted *Citywide Creeks and Wetlands Management Plan* and summarized in the City's General Plan 2030 EIR (City of Santa Cruz 2012-Draft EIR volume).

San Lorenzo River Watershed

The San Lorenzo River Watershed is the largest watershed in the City, with the San Lorenzo River flowing adjacent to the center of the City's downtown area. The San Lorenzo River drains a 138-square mile watershed, featuring forested and urbanized areas within the City and Santa Cruz County. Within the City limits, the lower San Lorenzo River flows southward from the Sycamore Grove area of Pogonip, through the center of Santa Cruz, to Monterey Bay. This lower reach of the San Lorenzo River encompasses much of the river's historic floodplain. Branciforte Creek and Jessie Street Marsh are tributaries to the San Lorenzo River.

The watershed is comprised predominantly of open space lands (41%) in the northern portion, and residential neighborhoods (26%) and paved roads (13%) as the river flows south through the City. Other land uses include commercial businesses and a portion of the UCSC campus. The primary tributary streams within City limits include: Carbonera Creek, Branciforte Creek, Glen Canyon Creek, and Pogonip Creek. Over the last 60 years the San Lorenzo River has been impacted by increasing development within the watershed and the channelization of the lower 2.5 miles into a levee flood control structure following a damaging flood in Santa Cruz in 1955. This flood control project, developed in cooperation with the USACE, included rip-rap levee banks, removal of all vegetation from the banks, and dredging of the river channel bottom. During construction of the levee project, Jessie Street Marsh was filled and the lower Branciforte Creek was channelized in a cement culvert. No modifications have been made to the Branciforte Creek since the original project was constructed in 1959. The USACE completed another levee improvement project in 2000 that improved and raised the levees and was deemed substantially complete in 2020. The design incorporated native vegetation concepts and a continuous bicycle and pedestrian path along the length of the levees.

Moore Creek Watershed

The Moore Creek watershed is located on the western side of Santa Cruz and drains directly into the Pacific Ocean at Natural Bridges State Park. The watershed is comprised primarily of open space (50%) and the UCSC campus (23%). Also within the watershed are residential areas, general industrial businesses, and parks. The primary resources located within this watershed are as follows: Younger Lagoon, Moore Creek, Antonelli Pond, Natural Bridges State Park, and Monterey Bay.

Neary Lagoon Watershed

The Neary Lagoon Watershed is located in between the Moore Creek, Westside, and San Lorenzo River Watersheds. The watershed drains into Monterey Bay and the Pacific Ocean at Cowell Beach. The watershed drains the majority of the UCSC campus (44%) and residential neighborhoods (33%). Other land uses include roads, open spaces, churches and schools, and commercial businesses. Neary Lagoon is centrally located in the City's urban core and is comprised of approximately 44 acres of wetland, riparian and woodland habitats. The lagoon collects runoff and groundwater from approximately one half of the west side of the City, most of which is residential. A weir controls the lagoon water level. The lagoon outlets to Monterey Bay at Cowell Beach during the wet weather season via a gravity storm drain and one forced main storm drain. During the dry weather season, the lagoon's discharge is diverted to the Wastewater Treatment Facility. The primary resources are

as follows: Donero Creek, Westlake Pond, Laurel Creek, Bay Creek, Neary Lagoon, Cowell Beach, and Monterey Bay.

Arroyo Seco - Westside Watershed

The Westside Watershed is also located on the western side of the City, between the Moore Creek Watershed and the Neary Lagoon Watershed. The southern boundary of the Westside Watershed is the Pacific Ocean. A significant portion of the watershed is comprised of residential areas (53%) and paved roads (21%). Other land uses include open space, churches and schools, and industrial facilities. The primary resources are: Bethany Creek, Arroyo Seco Corridor, Lighthouse Field State Park, and Monterey Bay.

Arana Gulch Watershed

The Arana Gulch Watershed is located on the City's eastern border and is partially within the unincorporated residential areas of the County. The watershed drains into Monterey Bay at the Santa Cruz Yacht Harbor. The watershed, within City limits, is comprised predominantly of residential neighborhoods (34%) and open space (34%). Other land uses include paved roads, churches and schools, and the Santa Cruz Port District (Yacht Harbor). The primary resources include the following: Arana Creek, West Branch Creek, Hagemann Gulch, Woods Lagoon, the Santa Cruz Yacht Harbor, and Monterey Bay.

Baldwin Creek/Wilder Creek Watershed

The Baldwin/Wilder watershed is located within the unincorporated area of Santa Cruz County north of the City. It drains an area of approximately 20 square miles, is comprised of numerous tributaries, and the majority of the watershed is comprised of Wilder Ranch State Park with some agriculture land uses along the coast and a quarry along Old Dairy Gulch (County of Santa 2022). Lombardi Creek is located within this watershed and runs through the City's RRF (landfill) that is located off of Dimeo Lane.

Others

The following are summarized from the City's Citywide Creeks and Wetlands Management Plan (2006).

Bethany Creek

Bethany Creek is located on the westside of Santa Cruz and extends from a residential neighborhood near Seaside Street to Delaware Avenue and to the ocean. It flows into Monterey Bay near the intersection of West Cliff Drive and Woodrow Avenue. The creek was named, for purposes of the Citywide Creeks and Wetlands Management Plan, for the nearby roadway.

Lighthouse Drainage

Lighthouse Drainage is a small drainage located in Lighthouse Field State Beach that is under management by the State of California.

Natural Bridges Creek

Natural Bridges Creek is an intermittent creek that drains into Monterey Bay at Natural Bridges State Park. The lower portion of the creek supports nonnative woodland (eucalyptus) that is an over-wintering site for the monarch butterfly.

Pilkington Creek

Pilkington Creek is an intermittent creek that drains onto Seabright Beach (near Seabright Avenue and the Natural History Museum), which is a part of Twin Lakes State Beach. The watercourse flows through a gulch from roughly Seabright Avenue and Woods Street to Monterey Bay, entering at the foot of Mott Avenue.

IV. Environmental Checklist

Environmental Factors Potentially Affected by the Project:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

	Aesthetics		Agricultural and Forestry Resources	✓	Air Quality
✓	Biological Resources	✓	Cultural Resources		Energy
	Geology / Soils		Greenhouse Gas Emissions	✓	Hazards and Hazardous Materials
✓	Hydrology / Water Quality		Land Use / Planning		Mineral Resources
	Noise		Population / Housing		Public Services
	Recreation		Transportation		Tribal Cultural Resources
✓	Utilities / Service Systems		Wildfire		Mandatory Findings of Significance

Instructions to Environmental Checklist

1. A brief explanation is required (see Section VI, Explanation of Environmental Checklist Responses) for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question (see Section V, References and Data Source List, attached). A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained

where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that any effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less-than-significant level.
5. Earlier Analysis may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case a discussion should identify the following on attached sheets:
   a) *Earlier Analysis used.* Identify earlier analyses and state where they are available for review.
   b) *Impacts adequately addressed.* Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
   c) *Mitigation measures.* For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. The explanation of each issue should identify:
   a) The significance criteria or threshold, if any, used to evaluation each question; and
   b) The mitigation measure identified, if any, to reduce the impact to less than significance.

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
1. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?				✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓
2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement Methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (V.1b-DEIR volume)				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				✓
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) 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?			✓	
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?				✓
4. BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
c) 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?			✓	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓
5. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to in Section 15064.5?				✓
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?			✓	
c) Disturb any human remains, including those interred outside of formal cemeteries?			✓	
6. ENERGY. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			✓	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				✓
7. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (V.1b-DEIR volume)				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
ii. Strong seismic ground shaking? iii. Seismic-related ground failure, including liquefaction? iv. Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				✓
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				✓
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			✓	
8. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?				✓
9. HAZARDS AND HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				✓
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ miles of an existing or proposed school?				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			✓	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				✓
10. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			✓	
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?				✓
c) 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: i) Result in substantial erosion or siltation on- or off-site;				✓
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; or				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
iii) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				✓
d) In flood hazard, tsunami or seiche zones, risk release of pollutants due to project inundation?				✓
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?				✓
11. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?				✓
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?				✓
12. MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?				✓
13. NOISE: Would the project:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?			✓	
b) Result in exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?				✓
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
14. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				✓
15. PUBLIC SERVICES.				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physical altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services: a) Fire protection?				✓
b) Police protection?				✓
c) Schools?				✓
d) Parks?				✓
e) Other public facilities?				✓
16. RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓
17. TRANSPORTATION. Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			✓	
c) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?				✓
d) Result in inadequate emergency access?				✓
18. TRIBAL CULTURAL RESOURCES. Would the project:				
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources 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: a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or				✓
b) 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 Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			✓	
19. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, ~~or~~ wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or which could cause significant environmental effects?				✓
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				✓

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				✓
d) 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?			✓	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				✓
20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response land or emergency evacuation?				✓
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				✓
c) 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?				✓
d) 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?				✓
21. MANDATORY FINDINGS OF SIGNIFICANCE. Would the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			✓	

ENVIRONMENTAL IMPACTS Issues (and Supporting Information Sources)	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects.)			✓	
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				✓

Discussion of Environmental Checklist

See **Section VI, Explanation of Environmental Checklist Responses**, for discussion.

V. Determination

On the basis of this initial evaluation:

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

Nathan N. Nguyen

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Date: 2025.05.21 15:32:02 -07'00'

Nathan Nguyen, Public Works Director

Date

VI. Explanation of Environmental Checklist Responses

1. Aesthetics

a-c) Scenic Views, Scenic Resources and Visual Quality. The City's General Plan 2030 EIR indicates that prominent scenic views are those that are oriented toward Monterey Bay and the Pacific Ocean or toward the Santa Cruz Mountains that frame the northern boundary of the City. Within the City, significant panoramic views are identified from neighborhoods and open space areas at upper elevations as well as along the coast. Maps developed for the City's *General Plan 2030* and included in the General Plan 2030 EIR identify panoramic views throughout the City that are mostly oriented toward the ocean or are from upper elevations in the northern portion of the City. "Urban views" are identified along San Lorenzo River.

There are no officially designated State Scenic Highways in the City or adjacent unincorporated County area. However, Highway 1 north of the City is identified by the State of California as being eligible for a State Scenic Highway designation[2].

Most of the watercourses subject to routine maintenance activities are not visible from public vantage points and are not within a wide-ranging public viewshed with some exceptions, such as San Lorenzo River, which is a prominent visual feature in the downtown area. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. Most maintenance activities, such as removal of sediment and culvert maintenance would not result in alterations to the physical environment that would be highly visible or noticeable.

Vegetation removal and tree trimming along watercourses may temporarily change the appearance of the river channel due to a reduction in vegetation. However, locations of maintenance activities would vary from year to year, but most locations are not widely visible, except for San Lorenzo River. However, limitations on vegetation removal and trimming in the San Lorenzo River corridor are included in the Project BMPs, and are already routinely implemented during maintenance activities or required by adopted plans. As a result, riparian vegetation along the San Lorenzo River would be trimmed in accordance with the BMPs, but would not be visually prominent that given that other riparian vegetation would remain intact. Thus, the visual character along the San Lorenzo River, as well as other watercourses, would not be substantially altered with proposed vegetation management activities. With implementation of Project BMPs and given remaining existing vegetation that would remain in any location, vegetation removal or tree trimming would not be prominently visible, and this

[2] California Department of Transportation (Caltrans). 2023. Scenic Highways. Accessed February 18, 2025 at https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways.

temporary change would not substantially alter scenic views or resources or affect the visual character of surrounding areas.

While some trees may be removed at some locations, this would primarily be in response to removal of obstructions within channels. The Project BMPs include a measure to retain mature riparian trees (#31). There are no designated scenic highways adjacent to Project maintenance locations, although Moore Creek and San Lorenzo River flow under Highway 1. Any trees potentially removed would primarily be smaller sized-trees that would not be visually prominent or distinctive from a wide-ranging public vantage point, and would not considered scenic resources.

Additionally, the Project would not result in grading or construction of habitable structures or other structural development. Thus, the Project would not have a substantial adverse effect on scenic views or create a new source of substantial light or glare.

Therefore, the Project would not result in a substantial adverse impact to scenic vistas, scenic resources, or the visual character of surrounding areas, and would not introduce new sources of light or glare, resulting in *no impact* related to aesthetics.

2. Agriculture and Forestry Resources

(a, b, e) Agricultural Lands. There are no lands within the City that are designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the Important Farmland Map prepared by the California Department of Conservation's Farmland Mapping and Monitoring Program. Lands within the City are primarily designated "Urban and Built-Up Land" and "Other Land" on the Santa Cruz Important Farmland Map. Two watercourses are in areas mapped as "Grazing Land": Arana Creek and Hagemann Gulch at the City-owned Arana Gulch open space area, and Moore Creek at the City-owned Moore Creek Preserve. None of the watercourses identified for maintenance activities are adjacent to lands designated or used for agricultural uses in the City's General Plan. However, a portion of Moore Creek Preserve is periodically used for grazing.

The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. These activities are primarily undertaken using hand crews, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal. The proposed routine maintenance activities would not result in development and would not result in the conversion of farmland to non-agricultural uses. The Project would not conflict with existing agricultural zoning or any Williamson Act contracts as none exist within the vicinity of proposed maintenance locations. Maintenance activities along streams would include general vegetation management measures, which could involve annual pruning and limited removal of small trees, as well as removal of invasive vegetation. These activities would not affect grazing

that may occur within the Moore Creek Preserve. Therefore, the Project would not result in or lead to the conversion of agricultural lands to other uses, and *no impact* would occur.

(c, d, e) Forest Lands. There are no lands within the City that are zoned Timberland Production. As indicated above, the proposed Project consists of routine maintenance activities along and within specified streams as indicated above. The Project would not involve the conversion of forest land or timber resources. Additionally, the Project would not result in the direct or indirect conversion of farmland or forest land. Therefore, the Project would not result in the conversion of forest lands to other uses, and *no impact* would occur.

3. Air Quality

(a) Conflict with Air Quality Management Plan. In 1991, the Monterey Bay Air Resources District (MBARD) adopted the Air Quality Management Plan (AQMP) for the Monterey Bay Region in response to the California Clean Air Act of 1988, which established specific planning requirements to meet the ozone standards. The California Clean Air Act requires that AQMPs be updated every three years. The MBARD has updated the AQMP seven times. The most recent update, the *2012-2015 Air Quality Management Plan* (2016 AQMP), was adopted in 2017. The 2016 AQMP relies on a multilevel partnership of federal, state, regional, and local governmental agencies. The 2016 AQMP documents the MBARD's progress toward attaining the state 8-hour ozone standard, which is more stringent than the state 1-hour ozone standard. The 2016 AQMP builds on information developed in past AQMPs and updates the 2012 AQMP. The primary elements from the 2012 AQMP that were updated in the 2016 revision include the air quality trends analysis, emission inventory, and mobile source programs (MBARD 2017).

For population-related projects, the MBARD developed a procedure that compares existing, under-construction, and approved residential dwelling units with AMBAG's housing unit forecast for a jurisdiction, as dwelling units are closely related to population and can be tracked within local jurisdictions. Non-residential population related activities (e.g., hotels, motels) would be evaluated on a case-by-case basis for consistency.

The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. The proposed annual maintenance activities would not result in construction of habitable structures or a stationary source of air emissions, and would not result in an increase in population. Therefore, the Project would not result in new development that would conflict with or obstruct implementation of the current AQMP for the NCCAB, and would result in *no impact*.

(b) Project Emissions. The U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards that are the maximum levels of ambient (background) air pollutants considered safe, with an adequate margin of safety to protect public health and welfare. Criteria pollutants include ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), inhalable particulates (PM_{10}), fine particulates ($PM_{2.5}$), and lead. High O_3 levels are caused by the cumulative emissions of reactive organic gases (ROG) and nitrogen oxides (NO_x), which react under certain meteorological

conditions to form O_3. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. An area is designated as "in attainment" when it is in compliance with the federal and/or state standards, as further discussed below.

The Project maintenance sites are located within the North Central Coast Air Basin (NCCAB), which is under the jurisdiction of the MBARD and includes Santa Cruz, Monterey, and San Benito Counties. The NCCAB is designated attainment for the federal PM_{10} and SO_2 standards and is designated attainment/unclassified for the other federal standards. The NCCAB is designated attainment for the state $PM_{2.5}$, NO_2, SO_2, and lead standards, and is designated unclassified for CO in Santa Cruz County. The NCCAB has nonattainment designations for state O_3 and PM_{10} standards.

The MBARD 2012-2015 AQMP, adopted March 15, 2017, identifies a continued trend of declining O_3 emissions in the NCCAB primarily related to lower vehicle miles traveled (VMT), showing that the region is continuing to make progress toward meeting the state O_3 standard during the three-year period reviewed (MBARD 2017).

Impact Analysis. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. These activities are primarily undertaken using hand crews, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal. The Project would not result in grading or construction of habitable structures or other structural development, and would not result in a new source of stationary emissions.

Air pollutant emissions would primarily be short-term and associated with equipment use during maintenance and vehicle trips to work sites. However, due to the limited scope of the maintenance activities and equipment used, short duration, and dispersed nature of these activities, emissions would be minimal and well below MBARD significance thresholds for criteria pollutants. The MBARD's "CEQA Air Quality Guidelines," indicate that 8.1 acres could be graded per day with minimal earthmoving or 2.2 acres per day with grading and excavation without exceeding the PM_{10} threshold of 82 lbs./day. However, routine maintenance projects would not result in grading or excavation. The dry channel portion of the San Lorenzo River between Highway 1 and Water Street bridge are routinely disked to improve channel conditions for flood control. While the total area at times reaches or slightly exceeds 2 acres, this activity would not typically be completed in one day and would not exceed 8.1 acres per for minimal earthmoving. Therefore, Project emissions would not be considered substantial or result in an air quality violation, and the impact would be *less than significant*.

According to the MBARD CEQA Guidelines, projects that are consistent with the AQMP would not result in in cumulative impacts, as the AQMP already accounts for regional emissions. The MBARD prepares air quality plans, which address attainment of the state and federal air quality standards, and which incorporate growth forecasts developed by AMBAG. The AQMP takes into account cumulative development within the City, and thus, cumulative emissions have been accounted for in the AQMP. As indicated above in criterion 3(a), the Project would not conflict with the AQMP. Therefore, the Project's contribution to cumulative air pollutant emissions would be *less than significant*.

(c) Sensitive Receptors. For CEQA purposes, a sensitive receptor is defined as any residence, including private homes, condominiums, apartments, and living quarters; education resources such as preschools and kindergarten through grade 12 (K-12) schools; daycare centers; and healthcare facilities such as hospitals or retirement and nursing homes (MBARD 2008).

Diesel particulate matter (DPM) was identified as a toxic air contaminant (TAC) by the State of California in 1998. DPM would be the primary TAC emitted from diesel-fueled equipment and trucks during construction activities. However, heavy-duty construction equipment and commercial trucks are subject to CARB Air Toxic Control Measures to reduce DPM emissions. The state implements emission standards for different classes of on- and off-road diesel vehicles and equipment that applies to off-road diesel fleets and includes measures such as retrofits that continue to reduce diesel emissions. Additionally, Title 13, Section 2485 of the California Code of Regulations prohibits idling of a diesel engine for more than five minutes in any location.

Impact Analysis. The Project would involve routine maintenance activities at various stream corridors and throughout the City, some of which are in proximity to sensitive receptors, primarily residences. Construction activities involving the use of heavy-duty equipment and vehicles would generate emissions of TACs, which could expose nearby sensitive receptors to increased health risks. However, proposed maintenance activities would involve use of hand tools with occasional use of mechanized equipment such as rubber-tracked vehicles or an aquamog. The activities would not require heavy equipment for construction or long-term use of diesel-powered machinery. As a result, DPM emissions would be limited over short durations and typically would not expose sensitive receptors. However, due to the relatively short period of exposure at any individual sensitive receptor, DPM TACs emitted during construction would not result in concentrations causing significant health risks.

Therefore, given the temporary, dispersed nature of work, minimal emissions, and state regulatory requirements for vehicles and construction equipment, temporary, limited DPM emissions resulting from maintenance activities would not expose sensitive receptors to substantial pollutant concentrations, and potential exposure of sensitive receptors to DPM and associated health risks would be considered a *less-than-significant impact*.

(d) Odors. According to the Air District's *CEQA Air Quality Guidelines* (MBARD 2008), land uses associated with odor complaints typically include landfills, agricultural uses, wastewater treatment plants, food processing plants, chemical plants, and refineries. The Project would not result in long-term generation of odors. The occurrence and intensity of potential odor impacts

depends on multiple factors, including the nature of the odor source, wind direction and speed, duration of the activity, and proximity to sensitive receptors. While unpleasant, odors rarely cause physical harm but may result in public complaints when persistent or concentrated near populated areas.

The proposed Project involves routine maintenance activities along and within publicly-maintained stream channels, wetlands, and waterways throughout the City. These activities would primarily use hand tools and small mechanized equipment such as mowers or small excavation equipment, which generally are not associated with creation of objectionable odors. Temporary exhaust odors due to diesel or gasoline combustion may occur, but would be minor, intermittent, and short-term, and would dissipate quickly with distance from the source. No activities associated with the Project would include operations known to produce strong or persistent odors—such as landfills, composting facilities, chemical plants, or wastewater treatment operations. All work would occur outdoors and in open-air settings where odor dispersion is facilitated. Additionally, maintenance activities are similar in scope and intensity to routine maintenance activities that historically occurred within the City. Therefore, the Project would not result in odors adversely affecting a substantial number of people, resulting in *no impact*.

4. Biological Resources

A Biological Resources Existing Conditions Report was prepared for the Project (Dudek 2025), and is included in Attachment A. The assessment identifies biological resources and potentially sensitive resources at or near proposed maintenance locations (study area) based on literature and database reviews and limited field site assessments. Overall, the Project includes 27 waterways ranging from urban drainages to natural creeks to major rivers surrounded by urban development in the lower elevations and a variety of habitat types in upper elevations in open space greenbelt lands owned and managed by the City. Biologists identified 17 vegetation communities or land cover types during the desktop review and follow-up site assessments. Review of the proposed Project and preparation of the following biological resources sections were prepared, by Dudek biologists.

(a) Special-Status Species. For the purposes of this analysis, special-status species are defined as follows. Special-status plants are those listed, or candidates for listing, as threatened or endangered under the federal Endangered Species Act (FESA), California Endangered Species Act (CESA), or both; and species identified in the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (particularly those with California Rare Plants Ranks [CRPR] of 1B – rare, threatened, or endangered throughout its range; or 2B – rare or endangered in California, more common elsewhere). Special-status wildlife are fish or wildlife species listed, or candidates for listing, as threatened or endangered under FESA, CESA, or both; designated as California Species of Special Concern (SSC) by CDFW; designated as fully protected under the California Fish and Game Code; or that meet the definition of rare, threatened, or endangered as described in Section 15380 of the CEQA Guidelines.

Special-status species have been documented in and along watercourses throughout the City in the Citywide Creeks and Wetlands Management Plan, technical biological studies conducted

for the City's *General Plan 2030*, the OMHCP, the draft ASHCP, and the LSLRLRMP. The Biological Resources Exiting Conditions Report identified 10 special-status plant species and 14 special-status wildlife species that have a moderate or high potential to occur at or near some of the Project sites. Special-status plant and wildlife species and the potential location(s) of their occurrence are summarized in Tables 6 and 7, respectively. Figure 4 shows general locations of potential listed species. Further description of special- status species is presented below.

Special-Status Plant Species. There are 10 special-status plants with a moderate to high potential to occur at some routine maintenance locations based on presence of suitable vegetation types and recorded occurrences: Anderson's manzanita, robust spineflower, Santa Cruz tarplant, Kellogg's horkelia, harlequin lotus, elongate copper moss, Mt. Diablo cottonweed, Hickman's popcorn-flower, San Francisco popcorn-flower, and Santa Cruz clover. Most of these are non-listed special-status species, except for three: robust spineflower is federally listed as endangered; Santa Cruz tarplant is federally listed as threatened and state-listed as endangered; and San Francisco popcorn-flower is state listed as endangered. The study area falls within designated critical habitat for Santa Cruz tarplant (Arana Gulch) and robust spineflower (Pogonip and Branciforte Creek). Additional information is provided in Attachment A, and listed species are further described below.

Robust spineflower is endemic to sandy soils of coastal and near coastal habitats in Santa Cruz County. Listed in 1994, currently there are 11 populations in Santa Cruz County over a range of approximately 21 miles. Robust spineflower is associated with sandy, open microhabitats within a variety of plant communities, including coastal scrub, maritime chaparral, oak woodland, and annual grassland. Two populations of robust spineflower are located in the city of Santa Cruz: Pogonip population (City-owned property) and Branciforte population (private property). At Pogonip, a 640-acre open space property owned and managed by the City of Santa Cruz, robust spineflower occurs in two colonies along the Pogonip Creek Trail and along the Brayshaw Trail. The City Parks and Recreation Department conducts an annual census of the population and implements habitat management actions (City of Santa Cruz 2021).

Santa Cruz tarplant*,* federally listed in 2000 and state-listed in 1979, is an aromatic annual and one of only four species of *Holocarpha,* which are all geographically restricted to California. Santa Cruz tarplant is currently known from coastal grasslands and prairies in Contra Costa, Santa Cruz, and Monterey Counties, California. In Santa Cruz County, 13 natural populations are known; seven occur in and around the City of Santa Cruz, and six populations occur in and around the City of Watsonville. In the City, Santa Cruz tarplant exists on flat to gently sloping marine terrace platforms that are often separated by steep-sided gulches. Of the 13 populations of Santa Cruz tarplant occurring along Monterey Bay, one is located within the City of Santa Cruz at the City-owned and managed Arana Gulch open space property. The City of Santa Cruz Parks and Recreation Department implements an Interim Tarplant Management Program within the known and historic tarplant areas which currently consists of seasonal mowing and raking, and periodic ground disturbances to create suitable growing conditions for the species. An additional population occurs at DeLaveaga Park, on lands managed by the California Air National Guard (City of Santa Cruz 2021).

Table 6. Special-Status Plant Species with Moderate to High Potential to Occur

Species	Status* (Federal/State/CRPR)	General Locations within the BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
Anderson's manzanita *Arctostaphylos andersonii*	None/None/1B.2	Moore Creek	-—	-—	-—	-—	-—
robust spineflower *Chorizanthe robusta* var. *robusta*	FE/None/1B.1	-—	-—	Branciforte Creek Pogonip Creek	--	Arana Gulch	-—
Santa Cruz tarplant *Holocarpha macradenia*	FT/SE/1B.1	-—	-—	-—	-—	Arana Gulch	-—
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	None/None/1B.1	Moore Creek	--	-—	-—	-—	-—
harlequin lotus *Hosackia gracilis*	None/None/4.2	Moore Creek	-—	-—	-—	-—	-—
Mt. Diablo cottonweed *Micropus amphibolus*	None/None/3.2	-—	-—	-—	-—	-—	Lombardi Gulch
elongate copper moss *Mielichhoferia elongata*	None/None/4.3	Natural Bridges	-—	-—	-—	-—	-—
Hickman's popcorn-flower *Plagiobothrys chorisianus* var. *hickmanii*	None/None/4.2	-—	-—	Carbonera Creek Branciforte Creek	-—	-—	-—
San Francisco popcornflower *Plagiobothrys diffusus*	None/SE/1B.1	Moore Creek	-—	-—	-—	-—	-—
Santa Cruz clover *Trifolium buckwestiorum*	None/None/1B.1	-—	-—	San Lorenzo River Redwood Creek Pogonip Creek	-—	-—	-—

Note: Additional information is in Attachment A, Special-Status Plant Species Potential to Occur,

***Status:**

FE: Federally Endangered | FT: Federally Threatened | FC: Federal Candidate for listing
SE: State Endangered | ST: State Threatened | SC: State Candidate for listing | SR: State Rare
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

Table 7. Special-Status Wildlife Species with Moderate to High Potential to Occur

Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
Invertebrates							
Monarch butterfly *Danaus plexippus* (California overwintering population)	FPT/None	Moore Creek Natural Bridges	Arroyo Seco	Branciforte Creek Ocean Villa Creek			Lighthouse Creek
Fish							
Pacific lamprey *Entosphenus tridentatus*	None/SSC	-—	-—	San Lorenzo River	-—	-—	-—
Tidewater goby *Eucyclogobius newberryi*	FE/SSC	Moore Creek Natural Bridges	-—	Branciforte Creek San Lorenzo River	-—	-—	-—
Monterey roach *Lavinia symmetricus subditus*	None/SSC	-—	-—	San Lorenzo River	-—	-—	-—
coho salmon - central California coast ESU *Oncorhynchus kisutch* pop. 4	FE/SE	-—	-—	San Lorenzo River	-—	-—	-—
Steelhead - central California coast DPS *Oncorhynchus mykiss irideus* pop. 8	FT/SSC	-—	-—	San Lorenzo River Branciforte Creek Carbonera Creek	-—	Arana Gulch	-—
Amphibians and Reptiles							
Santa Cruz black salamander *Aneides flavopunctatus niger*	None/SSC	Moore Creek	-—	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek	-—	Arana Gulch	Jordan Gulch
California giant salamander *Dicamptodon ensatus*	None/SSC	Moore Creek Natural Bridges	-—	Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek	-—	Arana Gulch	-—

Table 7. Special-Status Wildlife Species with Moderate to High Potential to Occur

Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
California red-legged frog *Rana draytonii*	FT/SSC	Moore Creek Natural Bridges	-—	-—	-—	-—	Lomardi Gulch
Northwestern pond turtle *Actinemys marmorata*	FPT/SSC	Moore Creek Natural Bridges	-—	San Lorenzo River	Laurel Creek	-—	-—
Birds							
white-tailed kite *Elanus leucurus* (nesting)	None/FP	Moore Creek Natural Bridges	-—	-—	-—	-—	-—
Nesting birds	N/A	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek Arroyo de San Pedro Regaldo Wagner Grove Pasatiempo Creek Jessie Street Marsh Ocean Villa Creek	Laurel Creek Bay Avenue Creek Chrystal Gulch Dodero Spring Creek Ojas de Agua Creek	Arana Gulch Hagemann Gulch Woods-Dog Leg Creek	Lombardi Creek Lighthouse Drainage Pilkington Creek Bethany Creek Jordan Gulch DeLaveaga Golf Course Irrigation Reservoir
Mammals							
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	None/SSC	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Pogonip Creek Redwood Creek Arroyo de San Pedro Regaldo	-—	Arana Gulch Hagemann Gulch	Jordan Gulch
Western red bat *Lasiurus frantzii*	None/SSC	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek	Laurel Creek	Arana Gulch	Jordan Gulch

Table 7. Special-Status Wildlife Species with Moderate to High Potential to Occur

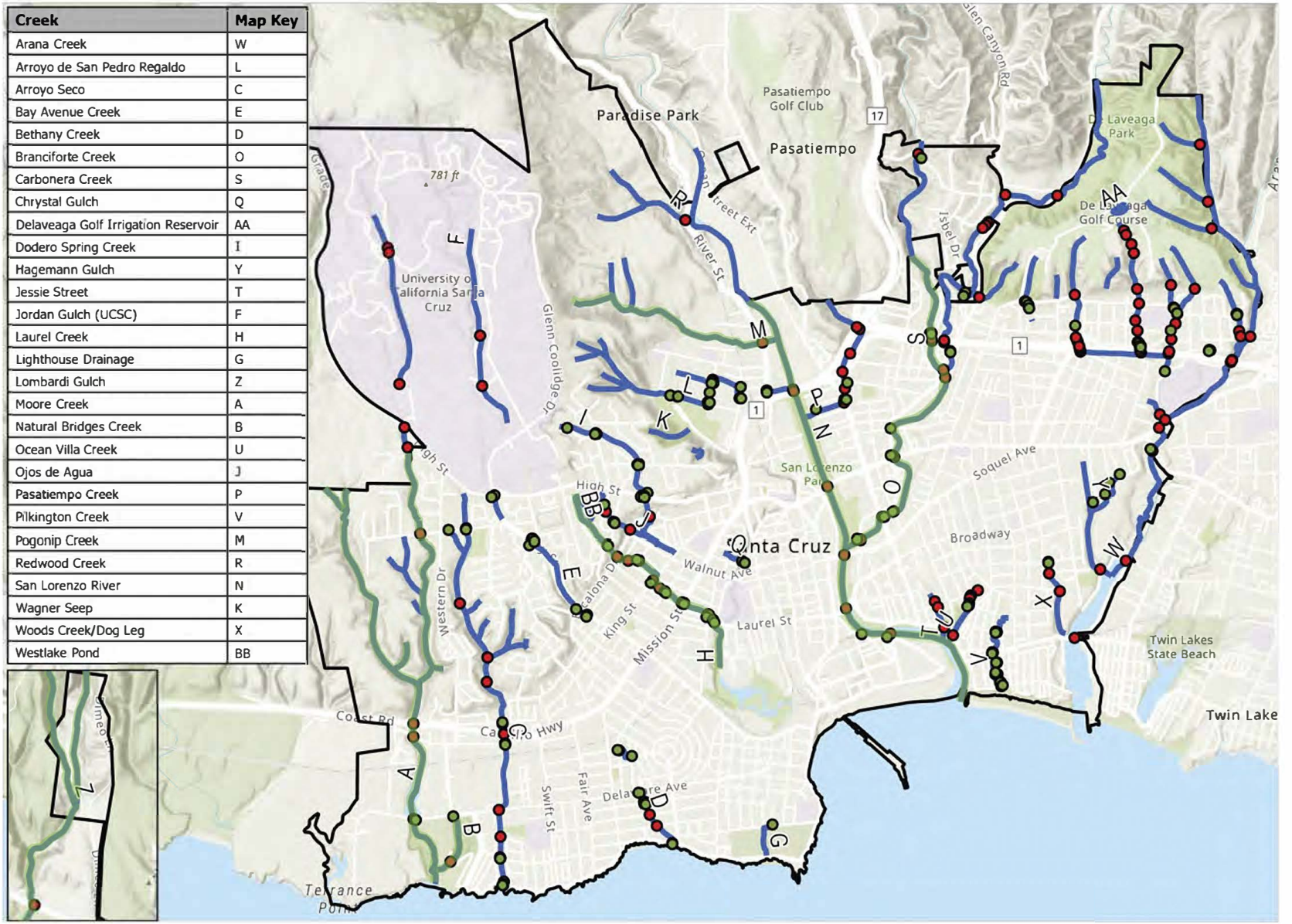
Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
				Arroyo de San Pedro Regaldo			
Common roosting bats	N/A	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek Arroyo de San Pedro Regaldo	Laurel Creek Neary Lagoon	Arana Gulch	Jordan Gulch

Note: Additional information in Attachment A, Special-Status Wildlife Species Potential to Occur

*Status

FE: Federally Endangered
FT: Federally Threatened
FPT: Federally Proposed for Listing as Threatened
FP: Fully Protected Species
SE: State Endangered
ST: State Threatened
SC: State Candidate for Listing
SSC: Species of Special Concern
WL: CDFW Watch List Species, including federal and state status.

Creek	Map Key
Arana Creek	W
Arroyo de San Pedro Regaldo	L
Arroyo Seco	C
Bay Avenue Creek	E
Bethany Creek	D
Branciforte Creek	O
Carbonera Creek	S
Chrystal Gulch	Q
Delaveaga Golf Irrigation Reservoir	AA
Dodero Spring Creek	I
Hagemann Gulch	Y
Jessie Street	T
Jordan Gulch (UCSC)	F
Laurel Creek	H
Lighthouse Drainage	G
Lombardi Gulch	Z
Moore Creek	A
Natural Bridges Creek	B
Ocean Villa Creek	U
Ojos de Agua	J
Pasatiempo Creek	P
Pilkington Creek	V
Pogonip Creek	M
Redwood Creek	R
San Lorenzo River	N
Wagner Seep	K
Woods Creek/Dog Leg	X
Westlake Pond	BB



SOURCE: City of Santa Cruz

FIGURE 4

Location of Potential Listed Species

City of Santa Cruz Routine Maintenance Project

DUDEK

San Francisco popcornflower is a small annual herb native to coastal prairies of central California. Once ranging north to San Francisco, this species is now restricted to approximately seven populations in Santa Cruz County and several unconfirmed occurrences in Alameda County. The species is known to occur on public and private lands in the City of Scotts Valley, on private lands in the western portion of the City of Santa Cruz (Meder Street area), UCSC, Moore Creek Preserve, and on private lands near Wilder Ranch State Park. San Francisco popcornflower is an uncommon associate of the coastal prairie plant community. Plants are frequently found in association with California oat-grass (*Danthonia californica*), purple needle grass (*Stipa pulchra*), suncup (*Camissonia ovata*), western rush (*Juncus occidentalis*), and California blue-eyed grass (*Sisyrhinchium bellum*). This species favors moist conditions, preferring poorly drained, sandy-loam soils, often growing in mesic zones at the edge of the coastal terrace. Related species have been known to persist in the seedbank for at least seven years. Habitat management at Moore Creek Preserve has found that San Francisco popcornflower benefits from cattle grazing because grazing reduces the cover of non-native grasses and forbs with which it competes for sunlight and water. Populations occupy mesic zones along the edge of coastal terraces in the western portion of the City of Santa Cruz (Meder Street area and at Moore Creek Preserve) (City of Santa Cruz 2021).

Special-Status Wildlife Species. 14 special-status wildlife species were either observed during the March 2025 field assessments or determined to have a moderate to high potential to occur within the study area based on the presence of suitable habitat and recorded observations: one invertebrate (monarch butterfly); five fish (coho salmon, Monterey roach, Pacific lamprey, steelhead, and tidewater goby); three amphibians (Santa Cruz black salamander, California giant salamander, California red-legged frog); one reptile (northwestern pond turtle); three mammals (San Francisco dusky-footed woodrat, Townsend's big-eared bat, western red bat); and one bird with potential to nest (white-tailed kite). Ohlone tiger beetle (*Cicindela ohlone*), federally listed as endangered, is known to occur at the Moore Creek Preserve but has low potential to occur in the study area due to the absence of open grassland habitat and is not discussed further. The study area falls within designated critical habitat for California red-legged frog (Moore Creek), tidewater goby (Moore Creek/Natural Bridges), coho salmon—Central California Coast ESU (San Lorenzo River, Branciforte Creek, and Carbonera Creek), and steelhead—Central California Coast DPS (San Lorenzo River, Branciforte Creek, Carbonera Creek, and Arana Gulch), and proposed critical habitat for monarch butterfly (Natural Bridges and Lighthouse Field). Additional information is provided in Attachment A, and listed species are further described below.

Special-Status Fish Species. Five special-status fish species are known to occur in some Project streams and are summarized below. These include: coho salmon, Monterey roach, Pacific lamprey, steelhead, and tidewater goby. San Lorenzo River supports all five species, although coho salmon are considered extirpated from the San Lorenzo River (City of Santa Cruz 2023). The San Lorenzo River and its tributaries provide habitat for steelhead, and the seasonal lagoon at the San Lorenzo River mouth supports rearing steelhead.

Steelhead inhabiting watercourses subject to the proposed maintenance activities are part of the Central California Coast distinct population segment (DPS), which is listed as threatened under FESA. The Central California Coast DPS consists entirely of winter-run steelhead and

extends from the Russian River south to Aptos Creek in the southern end of Santa Cruz County. The City is located in the southern range of the Central California Coast DPS.

Coho salmon in the City are part of the Central California Coast evolutionarily significant unit (ESU), which is listed as endangered under FESA and CESA. The Central California Coast ESU extends from Punta Gorda in Humboldt County south to and including Aptos Creek. Critical habitat has been designated for this ESU, including accessible portions of the Project streams. Historically, coho were found in as many as 50 coastal drainages in San Mateo and Santa Cruz counties but spawning runs were limited to 11 stream systems by the 1960s. More recently, two independent populations in the Santa Cruz Mountain (Pescadero Creek and San Lorenzo River) were considered currently extirpated or nearly so in the last NMFS 5-year status review (City of Santa Cruz 2023).

Special-status fish species covered by the OMHCP are tidewater goby and Pacific lamprey. Tidewater goby is federally listed as endangered, but has been proposed for reclassification as threatened. The United States Fish and Wildlife Service (USFWS) characterizes tidewater goby populations (i.e., localities) along the California coast as metapopulations (a group of distinct populations that are genetically interconnected through occasional exchange of animals). Local populations of tidewater gobies occupy coastal lagoons and estuaries that in most cases are separated from each other by the open ocean. Tidewater gobies are known to inhabit, or recently inhabited, the coastal lagoons of several streams in the Project including Moore Creek, Natural Bridges Creek, and the San Lorenzo River. Suitable habitat for the goby has also been identified in the lagoon of Arana Creek (City of Santa Cruz 2023). The City's OMHCP indicates that tidewater goby are likely to occur in the lower part of Branciforte Creek from slightly upstream of Ocean Street to the San Lorenzo River confluence and in the San Lorenzo River lagoon downstream of Water Street. It also indicates that tidewater goby are likely to be present in the San Lorenzo only downstream of Water Street and tidewater goby populations in the San Lorenzo River Lagoon appear to be somewhat sporadic (City of Santa Cruz 2021).

Pacific lamprey is a California SSC that is eel-like in form and anadromous, using both fresh water and marine habitats to complete its life cycle. After about one to three years in the ocean, Pacific lampreys migrate from the ocean to upstream freshwater spawning habitat as adults and, after hatching, larvae drift downstream to low-velocity rearing areas. Larvae eventually transform to juveniles and migrate downstream to enter the ocean. The San Lorenzo River and its tributaries support Pacific lamprey (City of Santa Cruz 2023).

Monterey roach is a subspecies of California roach and a California SSC. California roach are widely distributed in California, both geographically and in terms of habitat conditions. They are found in small, warm streams, cold water "trout" streams, in heavily modified habitats, and main channels of rivers. Monterey roach are present in the San Lorenzo River watershed. Roach have not been observed in seining surveys in the San Lorenzo lagoon and may not be abundant downstream of the Tait Diversion (City of Santa Cruz 2023).

OTHER SPECIAL-STATUS WILDLIFE SPECIES. There are nine special-status wildlife species with a moderate or high potential to occur on or in the vicinity of Project sites subject to routine maintenance activities. These include one invertebrate (monarch butterfly), three amphibians

(Santa Cruz black salamander, California giant salamander, California red-legged frog), one reptile (northwestern pond turtle), one bird with potential for nesting (white-tailed kite), and three mammals (San Francisco dusky-footed woodrat, western red bat). These species are briefly described below.

Invertebrates. Monarch butterfly was proposed for listing as threatened under FESA on December 12, 2024 (89 FR 10062). There are two subpopulations of monarch in North America, with the eastern population overwintering in Mexico and breeding in the Midwest and Great Plains, and the western population overwintering in coastal California and fanning out across the west from Idaho to Arizona to breed. Most California overwintering sites are within 1.5 miles of the Pacific Ocean or San Francisco Bay. These overwintering sites provide protection from the elements and moderate temperatures, as well as nectar and clean water sources located nearby. They are also the focus of USFWS-designated critical habitat for the species, which comprises 4,395 acres in Ventura, Santa Barbara, San Luis Obispo, Monterey, Santa Cruz, Alameda, and Marin Counties. Two of these sites, Natural Bridges State Beach and Lighthouse Field, are in the study area.

Amphibians and Reptiles. The California red-legged frog was listed as threatened under FESA on May 23, 1996 (USFWS 1996), and a recovery plan was approved in May 2002. In 2010, the USFWS revised their designated critical habitat for California red-legged frog, which now includes Central Coast watersheds from Wilder Creek north into San Mateo County. California red-legged frogs historically occurred in coastal mountains from Sonoma County south to northern Baja California, and along the Sierra Nevada foothills from Shasta County to Kern County. Young California red-legged frogs (metamorphs) are typically found in slow-moving, shallow riffle habitats in creeks, and along the margins of ponds, where they often can be seen during the day (as opposed to adults, which are mostly nocturnal). Adults are commonly associated with emergent vegetation or dense riparian vegetation and associated deep (approximately 2 to 3 feet), slow-moving water. Creek habitats usually are characterized by an open canopy, plentiful basking surfaces (e.g., exposed rocks, logs, or sand), and readily accessible riparian cover (City of Santa Cruz 2021).

There are very few California red-legged frog records from the San Lorenzo River basin, and no records for the City Urban Center Unit of aquatic habitat in the OMHCP (i.e., San Lorenzo River mouth, Neary Lagoon, Arana Creek) (City of Santa Cruz 2021). The City-owned and managed Moore Creek Preserve provides summer and potential breeding habitat for red-legged frogs, and juveniles produced at nearby ponds (UCSC Arboretum and to the west of the Preserve) may also migrate to Moore Creek soon after metamorphosis. Moore Creek also offers potential dispersal corridor habitat, and red-legged frogs have been observed in seasonal ponds at the headwaters of Moore Creek and at Antonelli Pond near the mouth of the creek (City of Santa Cruz 2021).

The Santa Cruz black salamander is a California SSC restricted to mesic deciduous or coniferous forests in the fog belt of the outer Coast Range of San Mateo, Santa Cruz, and Santa Clara counties. It occurs in moist streamside microhabitats and is typically found under rocks near streams, in talus, and under damp woody debris. Santa Cruz black salamander has high potential to occur in all Project watersheds except Arroyo Seco and Neary Lagoon. Streams and

adjacent drainages provide suitable habitat and there are four occurrences of this species in the study area, most recently from Jordan Gulch in 2015.

The California giant salamander is a California SSC that occurs in wet coastal forests near streams and seeps. This species' range is limited to Mendocino County, south to Monterey County and east to Napa County. Aquatic larvae are found in cold, clear streams and occasionally occur in lakes and ponds. Adults occur in wet forests under rocks and woody debris in the vicinity of streams or lakes. California giant salamander has high potential to occur in all Project watersheds except Arroyo Seco and Neary Lagoon. Streams, drainages, and seeps in nearby uplands provide suitable habitat.

The northwestern pond turtle is a California SSC and proposed for listing as threatened under FESA, and is the only native aquatic turtle in the state. Pond turtles occupy rivers, streams, lakes, ponds, seasonal wetlands, and intermittent streams where permanent and extended seasonal pools exist. They also use constructed features that provide aquatic and basking habitat, such as reservoirs, water treatment ponds, and stock ponds. Although they prefer fresh water, they also tolerate slightly brackish water, such as coastal lagoons. Adult turtles are often found in still or slow-moving water in sunlit waterways, but they also swim easily in swiftly moving water. When active, pond turtles spend much of their time basking (City of Santa Cruz 2021).

The San Lorenzo River watershed seemingly offers moderate quality breeding, foraging, and overwintering habitat for pond turtles. Within the City, pond turtles are well-documented from Neary Lagoon, although the population is not considered a self-supporting breeding population and has been in decline (City of Santa Cruz 2021).

Birds. White-tailed kite is a fully protected raptor species that occurs throughout California, primarily west of the Sierra Nevada in lowlands and foothills. Although white-tailed kites typically occur in open habitats such as grassland, marsh, and savanna, they will also use marginal habitats such as freeway edges and medians when foraging for voles and mice. Nests are constructed in a variety of trees, with coast live oak perhaps the most common, and placed high in the crown on thin branches. White-tailed kite has moderate potential to nest in the study area. The forest and woodland vegetation communities provide suitable nest trees but the extent of open grassland or meadows for foraging is limited. There are numerous observations of this species around Natural Bridges, Moore Creek, Jordan Gulch, and Pogonip.

Mammals. San Francisco dusky-footed woodrat is a California SSC and subspecies of the more widely distributed dusky footed woodrat. It is a year-round resident in the San Francisco Bay area, preferring forests and woodlands with a moderate canopy and dense understory, and feeds primarily on nuts, fruits, fungi, foliage, and flowers. It builds large terrestrial stick houses that range from 2 to 5 feet in height and can be up to 8 feet in basal diameter. The houses are typically placed on the ground or against a log or tree, but sometimes in the low- to mid-level canopy of a tree. This species is known to occur at Natural Bridges and Arana Gulch, where several stick houses were observed during the March 2025 field assessment.

Western red bat is a California SSC that roosts in the foliage of trees or shrubs. It is locally common in some parts of California during the summer, occurring from Shasta County to the Mexican border, west of the Cascade Mountains and Sierra Nevada crest and deserts. In the fall

(September to October), individuals make regional migrations (often less than 200 miles) to milder climates in western lowlands and along the coast, where they remain until the following spring (March to May). Western red bats are solitary foliage-roosters. Day roosts are commonly in edge habitat adjacent to streams, fields, orchards, and occasionally urban areas. Roost sites are generally hidden from view from all directions except below; lack obstruction beneath, allowing the bat to drop downward for flight; lack lower perches accessible by predators; have dark ground cover to minimize solar reflection; have nearby vegetation to reduce wind and dust; and are generally located on the south or southwest side of a tree (Bolster 2005). During fall and spring migration, roosts are used for short periods as migratory stopover sites (Johnston et al. 2019). Riparian trees along Project streams may be used by migrating or wintering individuals from September to May.

Impact Analysis. Proposed maintenance activities could impact special-status plant and wildlife species, if present in or adjacent to work areas. Table 8 summarizes potential special-status species by Project location. Most species occur or have the potential to occur within the Moore Creek and San Lorenzo watersheds.

Special-Status Plant Species. Project maintenance activities could result in direct impacts on special-status plants through physical damage or destruction during vegetation removal. Vegetation removal includes trimming and/or removal of riparian vegetation that may impede storm flows, result in bank erosion or cause property damage. Invasive, non-native vegetation also is one of the proposed routine maintenance activities. Estimated amounts of vegetation removal per location are shown in Table 2 and range between 5 and 30 cubic yards (cy) per year, except for larger amounts of vegetation removal estimated for San Lorenzo River (100 cy), Jessie Street Marsh (60 cy), and Arana Gulch and Creek (40 cy). Most of the identified special-status plant species with potential to occur are not found in riparian habitats, where vegetation removal would be focused.

The OMHCP covers municipal facility operations and maintenance, including flood control maintenance that includes debris/obstruction removal, sediment management/removal, and vegetation management. The OMHCP includes measures to avoid or minimize impacts to listed species – robust spineflower, Santa Cruz tarplant, and San Francisco popcornflower. The City must comply with these measures, and will implement the Special-Status Species and Habitat Protection Measures included in the Project BMPs. These measures are implemented as part of the City's annual routine maintenance activities, and some also are included in the City's OMHCP, including measures to avoid or minimize impacts to listed species. The biological opinion conducted for the approval of the City's ITP concluded that approval is not likely to jeopardize the continued existence of the three listed plant species and was not likely to result in destruction or adverse modification of critical habitat of the robust spineflower or Santa Cruz tarplant because effects on reproduction are low.

Table 8. Summary of Potential Special-Status Species by Location

	Location	Special-Status Plants	Special-Status Wildlife
Federally and State Listed / Federally Listed / State Listed / Other State / *California Species of Special Concern			
A.	Moore Creek	▪ Anderson's manzanita ▪ Kellogg's horkelia ▪ Harlequin lotus ▪ San Francisco popcornflower	▪ California giant salamander* ▪ California red-legged frog* ▪ Monarch butterfly (proposed) ▪ Northwestern pond turtle* ▪ Ohlone tiger beetle ▪ San Francisco dusky-footed woodrat* ▪ Santa Cruz black salamander* ▪ Steelhead* ▪ Tidewater goby* ▪ Townsend's big-eared bat* ▪ Western red bat*
B.	Natural Bridges	▪ Elongate copper moss	▪ California giant salamander* ▪ California red-legged frog* ▪ Monarch butterfly (proposed) ▪ San Francisco dusky-footed woodrat* ▪ Tidewater goby* ▪ Northwestern pond turtle* ▪ Western red bat*
C.	Arroyo Seco / Meder Canyon		▪ Monarch butterfly (proposed)
D.	Delaware-Bethany Creek		
E.	Bay Creek		
F.	Jordan Gulch		▪ Santa Cruz black salamander*
G	Lighthouse (ditch)		▪ Monarch butterfly (proposed)
H.	Laurel Creek		▪ Northwestern pond turtle*
I.	Dodero Creek		
J.	Ojas de Agua		
K.	Wagner Grove (ditch)		
L.	Arroyo San Pedro		▪ San Francisco dusky-footed woodrat* ▪ Western red bat*
M.	Pogonip Creek	▪ Robust spineflower ▪ Hickman's popcorn flower ▪ Santa Cruz clover	▪ California giant salamander* ▪ San Francisco dusky-footed woodrat* ▪ Santa Cruz black salamander* ▪ Townsend's big-eared bat* ▪ Western red bat*
N.	San Lorenzo River	▪ Hickman's popcorn flower ▪ Santa Cruz clover	▪ Coho salmon ▪ Monterey roach* ▪ Northwestern pond turtle* ▪ Pacific lamprey* ▪ San Francisco dusky-footed woodrat ▪ Santa Cruz black salamander* ▪ Steelhead* ▪ Tidewater goby* ▪ Townsend's big-eared bat* ▪ Western red bat*
O.	Branciforte Creek	▪ Hickman's popcorn flower ▪ Robust spineflower	▪ California giant salamander* ▪ Monarch butterfly (proposed) ▪ San Francisco dusky-footed woodrat* ▪ Santa Cruz black salamander* ▪ Steelhead* ▪ Townsend's big-eared bat*

Table 8. Summary of Potential Special-Status Species by Location

	Location	Special-Status Plants	Special-Status Wildlife
Federally and State Listed / Federally Listed / State Listed / Other State / *California Species of Special Concern			
			▪ Western red bat*
P.	Pasatiempo Creek		
Q.	Chrystal Gulch (swale		
R.	Redwood Creek	▪ San Cruz clover	▪ California black salamander* ▪ California giant salamander* ▪ San Francisco dusky-footed woodrat* ▪ Cruz black salamander* ▪ Townsend's big-eared bat* ▪ Western red bat*
S.	Carbonera Creek	▪ Hickman's popcorn flower	▪ California giant salamander* ▪ San Francisco dusky-footed woodrat* ▪ Santa Cruz black salamander* ▪ Steelhead* ▪ Townsend's big-eared bat* ▪ Western red bat*
T.	Jessie Street Marsh		
U.	Ocean Villa Creek		▪ Monarch butterfly (proposed)
V.	Pilkington Creek		
W.	Arana Gulch and Creek	▪ Robust spineflower ▪ Santa Cruz tarplant	▪ Santa Cruz black salamander*
X.	Dog Leg Creek		
Y.	Hageman Gulch		
Z.	Lombardi Creek	▪ Mt. Diablo cottonweed	▪ California red-legged frog*
AA.	DeLaveaga Golf Curse Irrigation Reservoir (Ramer Lake)		
BB.	Westlake Pond		

Compliance with the OMHCP and Project BMPs would avoid or minimize direct effects to special-status plant species, if any are present in maintenance work areas. The OMHCP measures and Project BMPS include conducting pre-construction surveys at maintenance sites prior to start of maintenance activities and requiring that any identified special-status plant species population boundaries be clearly delineated with visible flagging or fencing prior to beginning maintenance activities to avoid impacts to the species. The Project BMPs also require that the spread or introduction of invasive exotic plant species be avoided to the extent practicable with offsite disposal of invasive plant material. The OMHCP concluded that the combination of the implementation of avoidance and minimization measures along with the nature and location of operations and maintenance activities covered in the OMHCP would result in only minimal direct or indirect effects to covered plant species (City of Santa Cruz 2021).

The OMHCP covers municipal facility operations and maintenance, including vegetation management. While the OMHCP covers specified listed plant species, the proposed Project BMPs would apply the same measures to any special-status species that may be found. Additionally, the proposed maintenance activities would not result in construction or direct removal of habitat. Therefore, with implementation of Project BMPs and adherence to

avoidance and minimization measures in adopted HCPs, the Project would not have an adverse effect on special-status plant species.

Special-Status Wildlife Species. As indicated above, there are 13 special-status wildlife species with a moderate or high potential to occur at or near some routine maintenance locations, including two invertebrates, five fish, three amphibians, one reptile, three mammal, and one bird (nesting) species.

FISH SPECIES. Special-status fish species could be indirectly affected if there is work in the active channels, which could cause changes in turbidity, sedimentation, or structure of the streambed. Sediment management and removal can occur at drainage discharge structures in the San Lorenzo Lagoon and in the San Lorenzo River and Branciforte Creek flood control channels. Sediment accumulated in the drainage discharge structures is removed as needed by the City under their existing Nationwide Permit issued by the USACE (City of Santa Cruz 2021). Sediment removal may affect all life-stages of tidewater goby including eggs in burrows. Flood control maintenance activities also include removal of debris and obstructions and vegetation management. Removal of debris and obstructions removal occurs on an as needed basis to comply with flood conveyance requirements as determined by hydraulic modeling.

The City's OMHCP reports that there are 15 gravity flow outfall structures in the area likely to support tidewater goby in the San Lorenzo River. Should sediment removal around these structures be required, the OMHCP estimated that the area to be affected by coffer dam construction and dewatering would be approximately 20 feet by 20 feet at each of the structures. Each structure would require approximately one day for sediment removal. It is anticipated that sediment would be removed at each structure once in every 1 to 5 years, and a total of approximately 6,000-square feet (0.14 acre) of channel bed would be affected by the "Covered Activities" in the OMHCP if all outlets are cleaned in any given year. Under the OMHCP, the majority of tidewater gobies would be moved outside of the work area prior to construction, although there could be the loss of some males and eggs remaining in burrows. However, the area subject to temporary impacts (6,000-square feet or 0-.14 acre) was found to constitute a small percentage of the habitat available to the species in the San Lorenzo River (City of Santa Cruz 2021).

Sediment removal in areas where tidewater goby are present could result in harm, harassment, and potential killing of goby through capture and removal of individuals from the work areas and destruction of burrows with any eggs and males present, but would not cause complete disruption of breeding activities in the San Lorenzo River lagoon. Disturbance would be relatively infrequent and only a small area will be involved, and the OMHCP concluded that effects to tidewater goby population in San Lorenzo River would be negligible and that the species would be expected to rapidly recolonize disturbed areas (City of Santa Cruz 2021).

The draft ASHCP includes a Conservation Strategy and AMMs that are part of the ASHCP Conservation Strategy, and potential impacts to steelhead and/or coho salmon were found to be avoided or minimized with implementation of these AMMs (City of Santa Cruz 2023).

The Routine Maintenance Project BMPs require that maintenance activities be conducted outside of the wetted channel, wherever feasible, except for sediment removal or culvert maintenance. Potential use of coffer dams and dewatering for these activities would be minimal as described above. The physical disking is done in the dry bed of the San Lorenzo River, primarily between the Highway 1 and Water Street bridges, and vegetation removal is managed by vegetation buffer zones measures from the wetted edge. Maintenance activities would be conducted between June and October, which would be outside of the steelhead migration period in San Lorenzo River that extends from December through March for adult upstream migration and April through May for juvenile downstream migration. Physical sediment disking activities and vegetation removal within and along San Lorenzo River that have occurred as part of the City's routine maintenance program are coordinated with a fishery biologist prior to implementation to ensure that the area of management and disturbance will not directly or indirectly affect aquatic habitat.

In approving an ITP to the City of Santa Cruz, the USFWS concluded that the OMHCP minimizes and mitigates the impacts of take of the tidewater goby and Pacific lamprey, as well as impacts to Ohlone tiger beetle, California red-legged frog, and northwestern pond turtle to the maximum extent practicable in light of the low level of impacts anticipated to occur to the species from the covered activities. Under the provisions of the OMHCP, the impacts of take would be minimized, mitigated, and monitored through numerous general and species-specific measures that are discussed the OMHCP. The USFWS found that any take would be incidental and would not appreciably reduce the likelihood of the survival and recovery of the species. The biological opinion conducted for this approval concluded that the approval of the applicant's permit application is not likely to jeopardize the continued existence of the Ohlone tiger beetle, tidewater goby, CRLF, Pacific lamprey, and northwestern pond turtle, and is not likely to result in destruction or adverse modification of critical habitat of the tidewater goby and CRLF (USFWS 2021).

Impacts to all special-status fish species would be avoided or minimized with implementation of Project BMPs, which specify that work would be conducted outside of the wetted channel, except, for localized areas for removal of sediment or culvert maintenance. Indirect impacts related to potential sedimentation would be avoided with implementation of Project BMPs that require installation of erosion control measures to prevent erosion into the stream channel.

OTHER WILDLIFE SPECIES. Other special-status wildlife species could be adversely affected, if present in work areas. California red-legged frogs, special-status salamander species, and northwestern pond turtles may be killed or injured by removal of debris, sediment, logs, and/or vegetation, and by the movement of mechanized equipment, if any present at the time maintenance activities are undertaken. Active work in or over natural stream and drainage channels may cause changes in turbidity, sedimentation, or structure of the streambed and impact amphibian reproduction. Debris, sediment, and vegetation removal activities that result in disturbance or excavation of channel banks could impact nesting or estivating northwestern pond turtles, if present, during the nesting and estivation season (typically May –January).

Vegetation removal and other routine maintenance activities could directly impact San Francisco dusky-footed woodrats through destruction of nests and direct mortality by the operation of machinery in riparian habitat. Similarly, trimming of vegetation or removal of trees from September to May could harm any western red bats roosting in the trees during migration or the non-breeding season.

Routine maintenance activities would not be conducted during the Monarch butterfly overwintering period (typically late fall to early spring), and thus, would not result in direct or indirect impacts to this species.

Project BMPs include measures that would avoid or minimize direct or indirect impacts to special-status species, and be implemented as part of annual routine maintenance activities. Specifically, pre-construction surveys would be conducted at maintenance sites prior to start of maintenance activities. If any special-status wildlife species are found, specific BMPs set forth measures to protect species through monitoring and/or relocation in accordance with requirements of the OMHCP or typical CDFW conditions. There are separate measures for California red-legged frog, northwestern pond turtle, roosting bats, and San Francisco dusky-footed woodrat. In addition, Project BMPs include measures to leave embedded pieces of large woody debris or stumps that potentially serve as basking sites or encourage pool formation to be left in place if they do not obstruct flow of water and there is adequate flood flow capacity.

Conclusion. Therefore, with implementation of Project BMPs and adherence to avoidance and minimization measures in adopted HCPs, the Project would not have an adverse effect, either directly or through habitat modification, on special-status plant or wildlife species and would avoid or minimize potential impacts to special-status species, resulting in a *less-than-significant impact*.

(b-c) Riparian and Wetland Sensitive Habitat Areas. Sensitive habitats are defined by local, state, or federal agencies as those habitats that support special-status species, provide important habitat values for wildlife, represent areas of unusual or regionally restricted habitat types, and/or provide high biological diversity. Sensitive habitat occurring along stream corridors include riparian and aquatic/wetland habitats. Riparian vegetation is found along most of the watercourses included in the proposed Routine Maintenance Program. The Biological Resources Existing Conditions Report indicates that there are nine vegetation communities in study area that are considered sensitive natural communities by CDFW: bigleaf maple forest and woodland, black cottonwood forest and woodland, redwood forest and woodland, Douglas fir–tanoak-madrone forest and woodland, California sycamore-coast live oak riparian woodland, box-elder forest and woodland, white alder groves, Goodding's willow-red willow riparian woodland and forest, and arroyo willow thickets (Dudek 2025).

The Lower San Lorenzo River Lagoon Management Plan (LSLRLMP), adopted by the City in 2002, identifies recommendations to restore the biological and physical processes of a healthy and diverse ecosystem that can respond to the dynamic changes that occur on the San Lorenzo River, working within the constraints of maintaining flood capacity for a 100-year storm event. The Management Plan provides for "the enhancement and management of the lower San

Lorenzo River (generally south of Highway 1) as a functioning riparian corridor to increase abundance and diversity of all native species, with added focus on anadromous fish (steelhead and coho salmon) and other special-status species." The LSLRLMP includes management and restoration goals, one of which is to increase abundance and diversity of native plant species, including special-status species. Five objectives are presented to meet this goal, which include management and enhancement of riparian habitat and control of non-native, invasive species.

The LSLRLRMP also sets for vegetation management prescriptions shown in Table 9, and which have been implemented along the San Lorenzo River as part of annual maintenance activities. These prescriptions include maintaining a 10-foot-wide strip of riparian vegetation at the base of the river levee along most of the river and 5 feet wide in the estuarine reach south of Laurel Street. Trimming riparian willows and alder trees and removal of trees larger than specified sizes also are prescribed. Removal of willows that become established within the channel also are routinely removed to maintain flood flow conveyance in the river.

Table 9. San Lorenzo River Lagoon Management Plan Vegetation Management

Reach	Vegetation Management Prescription	Frequency
Bankfull Channel Area Instream Channel Bed	Remove riparian vegetation that exceeds accepted Corps Manning's "n" roughness coefficient for the flood control channel. A 5-foot edge of stream buffer area should be maintained on either side of the wetted edge.	Annually
Riverine Reach (Highway 1 to Water Street)	Allow 10-foot wide strip of willow and alder along toe of levee. Willows allowed to grow to 3" dbh. Alders allowed to grow to 6" dbh. The lower limbs of the alder trees should be trimmed. The willows should be thinned to favor providing overhanging cover to the low flow channel. Maintain a 5-foot buffer along wetted edges of channel, but thin groves and limb up trees. Remove any trees in 5-foot buffer area that are greater than 6" dbh.	Annually
Transitional Reach (Water Street to Laurel Street)	A 10-foot wide strip of woody riparian vegetation and tules and cattails should be maintained on the west bank. The east bank should be maintained to keep trees overhanging water. Trees or branches that fall in the water should be assessed for cutting into smaller pieces and may be removed entirely if they cause an immediate safety hazard. Sandbars should be maintained to allow volunteer groves to establish but remove all trees greater than 6 " dbh.	Annually
Estuarine Reach (Laurel Street to ocean)	A 5-foot wide strip of willow, cattail and tule should be maintained at the levee toe. Willows should have stem diameter of no greater than 0.5 inches and be limbed up and periodically thinned to create defined groves.	Annually

The LSLRMP also recommends annual monitoring of channel conditions and vegetation to determine maintenance requirements related to vegetation management that may be implemented in a given year. Monitoring has occurred since 2000, and includes surveys at 17 locations with cross sections of channel elevations, vegetation distribution and substrate type for determination of hydraulic roughness data and effects on flood capacity. The surveys also assist the city with monitoring the effectiveness of riparian vegetation management activities

and to verify whether flood protection requirements and habit enhancement goals recommended in the SLRLMP are being met (Waterways Consulting, Inc. 2025).

The City of Santa Cruz's routine maintenance activities also implement required measures and directives from the USACE to maintain the flood control capacity of the San Lorenzo River levee, and the attached planting efforts are consistent with the specifications of the San Lorenzo Urban River Management Plan (SLURP). The City works in conjunction with non-profit organizations and their volunteers to plant natives, and remove invasive and non-natives along the San Lorenzo River. Replanting efforts were resumed in 2021 after a year-long hiatus due to COVID and occur primarily on the east side of the levee between the Soquel Avenue and Laurel Street bridges and consist of mowable native grasses.

Impact Analysis. Proposed maintenance activities include tree trimming and/or removal of vegetation, some of which would include riparian vegetation. Vegetation management is a covered activity in the OMHCP, which focuses on trimming or removing riparian vegetation that may impede storm flows, result in bank erosion, or result in damage to property. In the majority of waterways, mature riparian trees are not removed, but riparian shrubs may be trimmed from ground level to 6-8 feet in height. Mature riparian trees are removed in the San Lorenzo River FCC and Branciforte Creek FCC per maintenance requirements of the USACE. Cuttings are removed from the work area and recycled as green waste at the landfill. Work is generally conducted in late August and may last from a few days to a few weeks depending on the area.

Trimming riparian trees and/or removal of riparian vegetation typically would occur in limited amounts and limited locations in a given year, and would be conducted to maintain flood flow conveyance in channels. For the San Lorenzo River, tree trimming and removal would be conducted in accordance with the vegetation management prescriptions included in the LSLRLMP and as determined by annual monitoring. Under these prescriptions riparian vegetation would be maintained to certain sizes within a vegetated buffers at the toe of the river levee adjacent to the channel.

Proposed maintenance activities also include removal of non-native species and replanting riparian vegetation in many locations, including along major watercourses, such as the San Lorenzo River, Moore Creek, and Branciforte Creek. Project BMPs include routine measures implemented by the City, which include minimizing disturbance to or removal of vegetation, selective vegetation management along San Lorenzo River and Branciforte Creek with limits on size of trees to be trimmed or removed as described above, and tree replacement, except along the San Lorenzo River, which is managed for flood control. Potential indirect impacts to sensitive riparian and wetland habitats due to inadvertent transport of sediment during sediment removal or culvert maintenance activities would be minimized and avoided through implementation of Project BMPs that require erosion control measures shall be installed and maintained during maintenance activities where soils would be disturbed.

Although the annual maintenance activities would result in minor loss of riparian vegetation at most locations, most impacts would occur from prescribed vegetation thinning and removal along the lower San Lorenzo River below the Tait Street Diversion, between

Highway 1 and Laurel Street (see Table 2). However, the overall net impact in this area would be offset by the City's goal to increase and expand riparian habitat in the selected areas as included in the LSLRLMP. As maintenance activities would vary from year to year depending on conditions present at that time, the actual amount of riparian habitat removed or impacted cannot be predicted. Additionally, the net increase in riparian habitat cannot be quantified. However, based on the natural regeneration of riparian habitat (see below) in combination with continued management objectives to increase and enhance riparian habitat, it is expected that the net increase in riparian habitat during the 5-year maintenance period would be greater than the cumulative acreage of actual vegetation removed during the same period.

Ten (10) years of vegetation monitoring (2010, 2015, 2017–2024) along the lower San Lorenzo River show that willows readily recolonize the channel edge after management activities. From January to December 2024, willow width *increased* at five of the eight annually surveyed channel cross sections, despite vegetation management occurring in October 2024. In December 2024, willow width exceeded the USACE-recommended width at all but three of the cross sections, and the average cross-section willow width across all 10 monitoring years ranged from 20.8 to 64.3 feet (Waterways Consulting, Inc. 2025). In other words, willows and other riparian vegetation were maintained along this reach and continued to provide habitat over the 10 years, despite minor thinning and limbing activities occurring every year, and there has been no long-term loss of habitat value. This would not change under the proposed Project. Given limited amounts and locations of vegetation removal that could occur each year, continued and rapid willow regrowth, and implementation of Project-proposed BMPs, the Project would not result in a substantial adverse impact to riparian habitat. Thus, potential direct or indirect impacts to sensitive riparian habitat as result of vegetation management and other maintenance activities would be avoided or minimized, resulting in a *less-than-significant impact*.

c) Wetland Habitat. Aquatic resources include waters of the United States regulated under the federal Clean Water Act; waters of the State regulated under the Porter-Cologne Water Quality Act; and rivers, streams, and lakes regulated under section 1602 of the CFGC (see Section 4.4.2, Regulatory Framework, for additional information about the related laws and regulations). All 27 watercourses in the proposed Routine Maintenance Project fall under the jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act, the Central Coast Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act or the California Porter-Cologne Act (Porter-Cologne), and CDFW under Section 1602 of the California Fish and Game Code. As noted above, these watercourses flow primarily into Monterey Bay. The drainages and entire lateral extent of the riparian canopy appear to meet the criteria to be considered waters of the United States and the state of California due to their physical, hydrologic, and biological characteristics. Riparian vegetation with these drainages falls under CDFW jurisdiction under Section 1602 of the California Fish and Game Code.

Impact Analysis. Proposed maintenance activities would not result in the permanent fill of aquatic or wetland habitats. Annual sediment disking activities in the San Lorenzo River would result in minor disturbance to the channel, however, such impacts would be temporary and would not impair the long-term hydrological functions of the channel, which

would be improved by this routine maintenance activity. Annual monitoring of San Lorenzo River that has occurred since 2000 provides information from which to recommend areas suitable for disking or sediment removal, which ensures that sediment removal would be limited to that necessary to maintain flood control. (It is also noted that USACE conducts 5-year inspections to ensure that the City is meeting the levee operation and maintenance requirements.) This routine measure is included in the Project BMPs. With implementation of BMPs, potential direct or indirect impacts to wetlands and aquatic habitats as result of disking in the San Lorenzo River or sediment and vegetation removal maintenance activities would be avoided or minimized, resulting in a *less-than-significant impact*.

(d) Wildlife Movement/Nesting.

Wildlife Movement. Wildlife corridors are segments of land that provide a link between different habitats while also providing cover. Wildlife dispersal corridors, also called dispersal movement corridors, wildlife corridors or landscape linkages, are features that function to connect at least two significant or core habitat areas and which facilitate movement of animals and plants between two or more otherwise disjunct habitats (City of Santa Cruz 2012-DEIR volume). Three main corridors have been identified within the City that could provide connectivity between core habitats within or adjacent to the city: western corridor (Moore Creek), central corridor (San Lorenzo River and major tributaries), and eastern corridor (Arana Gulch).

The proposed Project involves routine maintenance activities along and within publicly-maintained stream channels, wetlands, and waterways throughout the City. The Project would not result in any new structures that would obstruct or otherwise interfere with wildlife movement. Therefore, the Project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, resulting in *no impact*.

Nesting Birds. The trees and shrubs along City watercourses provide nesting habitat for migratory birds protected by the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code Section 3503. In addition, all raptor nests are protected by the Fish and Game Code. Suitable nesting habitat for a variety of native bird species, including white-tailed kite (see Table 7), occurs along most watercourses included in the proposed Routine Maintenance Project.

Impact Analysis. Proposed maintenance activities include vegetation removal, including small trees, and trimming of existing trees. Tree removal or trimming has the potential to destroy bird nests, eggs or chicks if any are present during construction. However, standard measures implemented as part of routine maintenance activities and included in the Project BMPs include conducting nesting bird surveys before any maintenance activities scheduled during the nesting season and protecting any identified nests with appropriate no-work buffers. Thus, potential impacts to nesting birds would be minimized, *resulting in a less-than-significant* impact.

(e) Conflicts with Local Ordinances – Tree Removal. Chapter 9.56 of the City Municipal Code defines heritage trees, establishes permit requirements for the removal of a heritage tree,

and sets forth mitigation requirements as adopted by resolution by the City Council. Generally, trees with a 14-inch or larger diameter are heritage trees. Resolution NS-23, 710 adopted by the City Council in April 1998 establishes the criteria for permitting removal of a heritage tree and indicates that one or more of the following findings must be made by the Director of Parks and Recreation:

1) The heritage tree or heritage shrub has, or is likely to have, an adverse effect upon the structural integrity of a building, utility, or public or private right of way;
2) The physical condition or health of the tree or shrub, such as disease or infestation, warrants alteration or removal; or
3) A construction project design cannot be altered to accommodate existing heritage trees or heritage shrubs.

Resolution NS-21, 436 sets forth the tree replacement/mitigation requirements for approved removal of a heritage tree to include replanting three 15-gallon or one 24-inch size specimen or the current retail value which shall be determined by the Director of Parks and Recreation. In the coastal zone, the City's certified Local Coastal Program (LCP) requires a two-to-one replacement ratio for removal of heritage trees, which would be six 15-gallon or two 24-inch specimens. Removal would be permitted if found in accordance with the above criteria and requirements. Approval of a tree removal permit automatically requires replacement trees as set forth above. Removal of heritage tress consistent with City regulations and requirements is not considered a significant impact.

Impact Analysis. Proposed routine maintenance activities could result in removal of small trees that generally would not be heritage tree size given the vegetation management prescriptions set forth for San Lorenzo River. However, Project BMPs also prohibit removal of mature riparian trees, except in the San Lorenzo River and Branciforte Creek FCCs for flood control. In the event a mature tree is planned for removal that meets the definition of a heritage tree under City regulations, the City would be subject to providing a replacement tree or fee as required by City regulations. Thus, potential removal of heritage trees consistent with City regulations is not considered a significant impact.

(f) Habitat Conservation Plans. There are no adopted Natural Community Conservation Plans in the City. As indicated above, the City's OMHCP provides for incidental permit coverage for a wide range of City activities. These activities include operation, maintenance and rehabilitation of the City's water supply and water system facilities; operation and maintenance of the City's municipal facilities; and management of City lands. Most of the routine maintenance activities included in the proposed Project also are covered activities in the OMHCP, and the City is subject to compliance with and implementation of the measures set forth in the plan. Additionally, many of the OMHCP measures are typically implemented as part of routine maintenance activities, and are included or referenced in the Project BMPs. Therefore, the Project would not conflict with provisions of the adopted OMHCP.

5. Cultural Resources

(a) Historical Resources. Under CEQA Guidelines Section 15064.5, a historical resource includes properties listed in or eligible for listing in the California Register of Historical Resources, local registers, or those determined by the lead agency to be historically significant. The City's Historic Building Survey includes structures that due to their listing are considered historical resources. In addition, structures older than 45 years in age and some archaeological resources may be considered historical resources.

The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. The proposed routine maintenance activities would not involve alteration or demolition of built environment features, and would not result in physical modifications to existing structures. Therefore, the Project would not cause a substantial adverse change in the significant of a historical resource as defined by CEQA, resulting in *no impact* to historical resources.

(b-c) Archaeological Resources and Human Burials. According to maps developed for the City's *General Plan 2030* and included in the General Plan EIR and updated in 2018, many locations of proposed routine maintenance activities are located within archaeologically sensitive areas (City of Santa Cruz 2018). The City's archaeological sensitivity includes two classifications: Highly Sensitive and Sensitive-Exemption May Apply. Much of the City, including most areas along watercourses, are designated as Sensitive-Exemption May Apply. Exempt projects are projects with low potential to impact a cultural resource, such as: those with spot excavation less than 12 inches deep; other small projects, such a minor building additions, deck construction; or excavation in soil documented as previously disturbed areas. The decision to classify a project "exempt" is made by the City's Planning Department and Community Development Department on a case-by-case basis (City of Santa Cruz 2018).

Impact Analysis. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City, many of which are located with mapped archaeologically sensitive areas. Archaeological resources, including archaeological resources of a historic nature and unique archaeological resources, are usually adversely affected only by physical destruction or damage that can be caused by grading and excavation and trenching. Impacts to archaeological resources and human remains most often occur as the result of excavation or grading within the vertical or horizontal boundaries of an archaeological resource. However, the proposed maintenance activities would not result in excavation, grading, or substantial ground disturbance. Any required soil disturbance, such as sediment removal around culverts, or disking the dry channel portion of the San Lorenzo River, generally would be minimal and would not result in excavation or below ground disturbance over 12 inches, except that disking the dry channel bed of the San Lorenzo River can range between 12-18 inches, but this is within the

river channel. Thus, the proposed maintenance activities generally could be found exempt from requirements for archaeological investigations, which would be determined by the City's Planning and Community Development Department.

Although, there could be a potential for the discovery of unknown cultural resources at maintenance site where limited soil disturbing activities could occur, such discoveries would be subject to review in accordance with City and state requirements. Section 24.12.430 of the City's Municipal Code sets forth the procedure to follow in the event that prehistoric or cultural features are accidentally discovered during construction, and the Project would be subject to these requirements. Under provisions of this Code section, work shall be halted within 50 meters (150 feet) of the find until it can be evaluated by a qualified professional archaeologist. If the find is determined to be significant, the Planning Director shall be immediately notified, and appropriate mitigation measures shall be formulated and implemented. Additionally, the County Coroner and shall be notified in accordance with provisions of Public Resources Code 5097.98-99 in the event human remains are found and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code section 5097 if the remains are determined to be Native American.

Therefore, the proposed Project would not cause a substantial change to the significance of an archaeological resource, resulting in a *less-than-significant impact*.

6. Energy

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the City. Central Coast Community Energy (3CE), formerly Monterey Bay Community Power (MBCP), was formed in March 2017 as a joint powers authority to provide locally controlled, 100% carbon-free electricity to residents and businesses in Monterey, San Benito and Santa Cruz Counties through the Community Choice Energy (CCE) model established by the State of California. The CCE model enables communities to choose clean-source power at a cost equivalent to PG&E while retaining PG&E's role in maintaining power lines and providing customer service. 3CE started supplying electricity to customers in spring 2018 with existing customers automatically enrolled. 3CE supplies electricity generated from hydropower, solar and wind, which are renewable resources.

The state of California's per capita electrical use has been the lowest or one of lowest of any state in the United States. California is among the top states in the nation in net electricity generation from renewable resources. The state leads the nation in net electricity generation from solar, geothermal, and biomass (U.S. Energy Information Administration 2024).

In 2007, Santa Cruz became one of the first municipalities in the nation to require new construction to include the adoption of environmentally superior building materials and designs. Builders in Santa Cruz now use best practices for their construction projects that enhance building energy efficiency and water conservation. The City encourages energy conservation strategies, for example, through its green building program, and has seen an increase in solar energy system installations. The City is in the process of expanding an existing

building decarbonization and electrification program to improve energy efficiency in existing buildings, to remove natural gas, and to replace the natural gas with energy-efficient electric appliances such as heat pumps (City of Santa Cruz 2023a).

(a) Energy Use. The Project would not result in the construction of new habitable structures or infrastructure requiring long-term energy demand and does not involve land use changes that would interfere with implementation of state or local energy plans. The proposed routine maintenance activities would include the use of mostly hand tools and small mechanized equipment, as well as vehicles powered by gasoline or diesel for transportation to and from work sites. However, the scale and duration of these activities would be limited and intermittent, and would not require large-scale construction equipment or continuous operation that would result in a substantial increase in energy demand. The Project would not introduce new facilities or uses that would increase long-term energy consumption. Given the limited scope and nature of the proposed maintenance activities, the energy consumption indirectly related to use of equipment and vehicles would be minor and not be wasteful, inefficient, or unnecessary, resulting in a *less-than-significant impact*.

(b) Conflicts with Plans. The Proposed Project does not include the construction of new buildings or significant alterations to existing structures, but involves routine maintenance activities along and within existing public stream and waterway corridors. As such, the Project would not interfere with the implementation of applicable state or local plans related to energy efficiency or renewable energy. Maintenance activities would be conducted in compliance with applicable regulations and would not result in long-term energy demand that could conflict with energy goals. Therefore, the Project would result in *no impact*.

7. Geology and Soils

(a.i) Fault Rupture. The City is located in a seismically active region of California, and the region is considered to be subject to very intense shaking during a seismic event. The City of Santa Cruz is situated between two major active faults: the San Andreas to the northeast and the San Gregorio to the southwest. There are no active fault zones or risk of fault rupture within the City (City of Santa Cruz 2012-DEIR volume), and the City, and maintenance locations, are not located within the boundaries of an Earthquake Fault Zone for fault rupture hazard as defined by the Alquist-Priolo Earthquake Fault Zoning Act. The closest active fault is the San Andreas fault, located approximately 11 miles northeast of the City. Furthermore, the Project consists of temporary, short-term maintenance activities that would not result in construction of new structural development. Therefore, the Project would result in *no impact* related to adverse impacts of fault rupture.

(a.ii-iv, c) Seismic and Geologic Hazards. Seismically induced hazards include ground shaking, surface rupture, ground failure, settlement, landslides, and water waves. Non-seismically induced hazards include slope instability, cliff retreat, and non-seismic settlement and landslides (City of Santa Cruz June 2012). According to maps developed for the City's *General Plan 2030* and included in the General Plan 2030 EIR, some maintenance locations are located in an area or adjacent to an area susceptible to liquefaction (City of Santa Cruz April 2012-DEIR volume Figure 4.10-4), and some watercourses are located along steep slopes (50%+) (City of

Santa Cruz April 2012-DEIR volume Figure 4.10-5). However, areas of mapped landslides within the City are limited and generally not near watercourses subject to the proposed routine maintenance activities.

The City and Project maintenance locations are located in a seismically active region of California and the region is considered to be subject to very intense shaking during a seismic event. However, the temporary, short-term maintenance activities that are part of the proposed Project would not result in construction of new habitable structures, and therefore, would not directly or indirectly cause potential substantial adverse effects, including risk of loss, injury or death involving seismic shaking or liquefaction, resulting in *no impact*. Similarly, the Project would not result in excavation or alteration of sloped areas or result in new development in such areas, and would affect stability of steep slopes. Maintenance activities would not result in landsliding, soil collapse or other impacts due to presence of non-seismic geological hazards, resulting in *no impact*.

(b) Erosion. According to maps developed for the City's *General Plan 2030* and included in the General Plan 2030 EIR, soils along some watercourses could contain soils rated as having a high erosion hazard (City of Santa Cruz April 2012-DEIR volume). The Project would not result in grading that could lead to erosion and would not lead to loss of topsoil. Some maintenance locations would be subject to routine removal of small amounts of sediment (approximately 5-10 cy per location as summarized on Table 2), primarily at culverts. There would also be areas of disking dry portions of the San Lorenzo River channel to improve flow capacity. These areas would be limited in size and scope, and Project BMPs required implementation of erosion control measures. Therefore, the Project would not result in substantial soil erosion or loss of topsoil, resulting in a *less-than-significant impact*.

(d) Expansive Soils. The Project consists of temporary, short-term maintenance activities along and with publicly-managed watercourses, and would not result in construction of structures that would be subject to expansive soils, resulting in *no impact*.

(e) Septic Systems. The proposed Project does not include construction of new structures or installation of septic tanks or alternative wastewater disposal systems. Therefore, the Project would result in *no impact* related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

(f) Paleontological Resources. According to maps developed for the City's *General Plan 2030* and included in the General Plan 2030 EIR, some areas along watercourses of the City are located within geologic units that are sensitive for containing paleontological resources, and paleontological resources have been found along the coast and scattered locations in the City (City of Santa Cruz April 2012-DEIR volume). The Project would not result in excavation or construction activities that could potentially destroy unknown paleontological resources if discovered during implementation of routine maintenance activities. Areas of sediment removal would be limited in area, scope and depth and would typically be located within stream channels. Similarly, disking of the dry channel in the San Lorenzo River would occur in an area routinely subject to this maintenance activity as well as scouring from flood flows. Thus, the potential for encountering unknown paleontological resources would be low. However,

General Plan Action HA1.2.3 requires the City to notify applicants within paleontologically sensitive areas of the potential for encountering such resources during construction and condition approvals that work would be halted and resources examined in the event of encountering paleontological resources during construction. If the find is significant, the City would require treatment of the find in accordance with the recommendations of the evaluating paleontologist. Treatment may include, but is not limited to, specimen recovery and curation or thorough documentation. The City would be subject to this policy should any resource be inadvertently discovered during routine maintenance activities With implementation of *General Plan 2030* policies and actions, the impact would be considered *less than significant*.

8. Greenhouse Gas Emissions

(a) Greenhouse Gas Emissions. Climate change refers to any significant change in measures of climate, such as average temperature, precipitation, or wind patterns over a period of time. Climate change may result from natural factors, natural processes, and human activities that change the composition of the atmosphere and alter the surface and features of the land. Significant changes in global climate patterns have recently been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, attributed to accumulation of greenhouse gas (GHG) emissions in the atmosphere. Greenhouse gases trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. Climate change models predict changes in temperature, precipitation patterns, water availability, and rising sea levels, and these altered conditions can have impacts on natural and human systems in California that can affect California's public health, habitats, ocean and coastal resources, water supplies, agriculture, forestry, and energy use (City of Santa Cruz April 2012-DEIR volume).

The most common GHG that results from human activity is carbon dioxide, followed by methane and nitrous oxide. The primary contributors to GHG emissions in California are transportation (about 37 percent), electric power production (24 percent), industry (20 percent), agriculture and forestry (6 percent), and other sources, including commercial and residential uses (13 percent). Approximately 81 percent of California's emissions are carbon dioxide produced from fossil fuel combustion (City of Santa Cruz April 2012-DEIR volume).

In 2006, the California Legislature passed the Global Warming Solutions Act of 2006 (AB 32), which sought to reduce GHG emissions generated by California to 1990 emissions levels by the year 2020. AB 32 defines GHGs to include carbon dioxide, methane, nitrous oxide, hydrocarbons, perfluorocarbons and sulfur hexafluoride. In 2016, the Legislature followed up with SB 32, which requires California, by 2030, to reduce its statewide GHG emissions so that they are 40 percent below those that occurred in 1990.

In enacting both AB 32 (2006) and SB 32 (2016), the Legislature codified some of the ambitious GHG reduction targets included within certain Executive Orders issued by Governors Schwarzenegger and Brown. The 2020 statewide GHG reduction target in AB 32 was consistent with the second of three statewide emissions reduction targets set forth in former Governor Schwarzenegger's 2005 Executive Order known as S-3-05, which is expressly mentioned in AB

32. (See Health & Safety Code section 38501, subd. (i)). That Executive Branch document included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050, reduce GHG emissions to 80 percent below 1990 levels. To meet the targets, the Governor directed several State agencies to cooperate in the development of a climate action plan. In 2015, Governor Brown issued Executive Order, B-30-15, which created a "new interim statewide GHG emission reduction target to reduce GHG emissions to 40 percent below 1990 levels by 2030 in order to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050." SB 32 codified this target.

In 2018, Governor Brown issued Executive Order B-55-18, which established a statewide goal to "achieve carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter." The order directs the California Air Resources Board (CARB) to work with other State agencies to identify and recommend measures to achieve those goals.

CARB is the lead agency for implementing AB 32 and SB 32. In accordance with these statutes, CARB conducts an annual statewide GHG Emission Inventory that provides estimates of the amount of GHGs emitted to the atmosphere by human activities within California. In accordance with requirements of AB 32, CARB adopted an Initial Scoping Plan in 2008 and is required to update the scoping plan at least every five years. The First Update to the Scoping Plan, approved in 2014, established a 2030 emissions target of 40 percent below 1990 levels. The 2017 Scoping Plan identified a balanced mix of strategies to meet the State's 2030 GHG limit.

The current 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan) was approved by CARB on December 15, 2022. The 2022 Scoping Plan lays out a path not just to carbon neutrality by 2045, but also to meet the 2030 GHG emissions reduction target. The 2022 Scoping Plan analyzed four scenarios, with the objective of informing the most viable path to remain on track to achieve the 2030 GHG reduction target. The scenario modeling indicates that, if the plan described in the Proposed Scenario is fully implemented, and done so on schedule, the State would cut GHG emissions by 85 percent below 1990 levels, resulting in a 71 percent reduction in smog-forming air pollution, reduce fossil fuel consumption by 94 percent, and create 4 million new jobs, among other benefits (CARB 2022a).

The 2022 Scoping Plan details "Local Actions" in Appendix D, which includes recommendations intended to build momentum for local government actions that align with the State's climate goals, with a focus on local GHG reduction strategies (commonly referred to as climate action planning) and approval of new land use development projects, including through environmental review under CEQA. The recommendations provided in Appendix D are non-binding and should not be interpreted as a directive to local governments, but rather as evidence-based analytical tools to assist local governments with their role as essential partners in achieving California's climate goals. Appendix D recognizes consistency with a CEQA-qualified GHG reduction plan such as a Climate Action Plan as a preferred option for evaluating potential GHG emission impacts under CEQA (CARB 2022b).

The City's *General Plan 2030* includes goals, policies, and actions on climate change, including reducing communitywide GHG emissions 30 percent by 2020, reducing communitywide GHG emissions 80 percent by 2050 (compared to 1990 levels), and for all new buildings to be emissions neutral by 2030. In September 2022, the City adopted the 2030 Climate Action Plan (CAP) that updated the previous CAP and outlines measures and actions that are intended to reduce GHG emissions, per capita, by approximately 40 percent below 1990 levels by 2030, meeting the SB 32 target for 2030 to reduce total GHG emissions 40 percent below 1990 levels. The CAP also seeks to achieve a carbon neutrality goal by the year 2035 prior to the State's target carbon neutrality goal by 2045 (City of Santa Cruz 2022). The CAP includes 31 measures with 152 associated individual actions, intended to reduce GHG emissions throughout the City. The measures include those related to building energy use and reduction, transportation, public infrastructure, and other climate restoration and sustainable government measures. Through implementation of its measures and actions, the CAP aims to reduce building energy consumption, vehicle miles traveled, solid waste generation, and increase carbon sequestration (City of Santa Cruz 2022).

Impact Analysis. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. These activities are primarily undertaken using hand equipment, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal. The Project would not generate any GHG emissions, except for minimal, temporary emissions when small mechanized equipment is used and for vehicle travel to maintenance sites. Therefore, emissions would be minor and temporary, and the Project would result in a *less-than-significant impact* with regards to greenhouse gas emissions.

(b) Conflicts with Applicable Plans. The proposed Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. The Proposed Project would not involve any development or construction that would directly result in population growth or increased VMT. The Project would be affected by the Scoping Plan measures related to fuel and clean vehicle standards because activities would involve the use of equipment required for construction, management, and maintenance activities. These measures would lead to cleaner vehicles and equipment for the Proposed Project and thus lower GHG emissions. Therefore, the Proposed Project would not conflict with the Scoping Plan.

The Project would not conflict with state plans adopted for the purpose of reducing GHG emissions. There are no measures in the City's CAP that are applicable to the proposed Project. Therefore, the Project would not conflict with provisions of the CAP, resulting in *no impact*.

9. Hazards and Hazardous Materials

(a-b) Hazardous Material Use, Sites and Emissions. The proposed Project does not include the routine transport, use, or disposal of hazardous materials. The proposed maintenance activities would be conducted with hand tools or small mechanized equipment that typically would not require use of hazardous materials, such as fuels and oils, at maintenance sites. However, the Project BMPs include measures to require any fueling equipment to be set back 65 feet from sensitive habitat, inspection of equipment to prevent leaks, and preparation of emergency response plans for any accidental spills. No herbicides would be used to control invasive, non-native plant species. Thus, the Project would result in a *less-than-significant impact* related to routine transport, use, disposal or accidental release of hazardous materials.

c) Hazardous Emissions Near Schools. There schools situated throughout the City and some are in proximity to routine maintenance locations. However, the proposed Routine Maintenance Project would not result in stationary sources that would result in hazardous emissions. Therefore, the proposed Project would result in *no impact* related to hazardous emissions near school facilities.

d) Hazardous Materials Sites. The locations of proposed routine maintenance activities are located along and adjacent to streams and water bodies. Two of the maintenance sites are located in or adjacent to sites included on the California Department of Toxic Substance Control and State Water Resources Control Board list of hazardous materials sites (GeoTracker) (California Environmental Protection Agency 2025). One site is at Pogonip, which was historically used as a skeet and trap shooting range from the 1930s to the 1950s. This past use resulted in contamination of soil with lead and polycyclic aromatic hydrocarbons (PAHs) due to the deposition of shot and clay targets. Subsequent investigations conducted between 2018 and 2022 confirmed elevated levels of lead and PAHs in specific areas of the site, particularly in the west meadow, north orchard, and east meadow. While other metals such as antimony, arsenic, copper, and zinc were also found, they were limited to a localized area and are not considered a significant concern. The primary contaminants of potential concern at the site are lead and PAHs. Further delineation of these contaminants is ongoing (State Water Resources Control Board 2025).

Pogonip Creek is contained in a steep ravine in this location to which access is limited, and routine maintenance activities likely would not be conducted. The City is in the process of developing a Health and Safety Plan to guide maintenance operations within this area. Any future work efforts would need to meet the safety protocols in the plan.

The second site is adjacent to the Jessie Street Marsh area in which levels of lead and arsenic have been found in an area of artificial fill. It is the City's intent to remove and/or remediate contaminated soils as part of the Jessie Street Marsh Restoration Plan that is under preparation. The City is evaluating options for removal of contaminated soils, and preparation of a Remedial Action Plan will be completed once a final wetlands restoration design has been selected (Weber, Hayes & Associates 2023).

Routine maintenance activities in the Jessie Street Marsh area typically consist of vegetation management, such as mowing, and removal of non-native vegetation. The City will be required to comply with requirements regarding remediation and/or use restrictions as may be included in the Remedial Action Plan that would be overseen by the County of Santa Cruz Environmental Health Division.

Thus, compliance with regulatory requirements regarding use and remediation at these sites would ensure that the Project would not create a significant hazard to the public or future maintenance workers due to inclusion of a site on a state list of hazardous materials sites, resulting in a *less-than-significant impact*.

(e) Location Near Airports. Neither the City nor any of the proposed routine maintenance locations are located within two miles of a public airport or private airstrip. Therefore, the Project would result in *no impact* regrading an airport safety hazard.

(f) Emergency Response. The Project would not include any changes to existing public roadways that provide emergency access. The Project would involve temporary, short-term maintenance activities that would not be located within existing streets or affect local circulation patterns. Thus, the Project would not impede emergency response and would not physically interfere with an adopted emergency response plan or emergency evacuation plan, resulting in *no impact* related to interference with adopted emergency response or evacuation plans.

(g) Wildland Fire Hazard. According to maps developed for the City's *General Plan 2030* and included in the General Plan EIR, some of the Project maintenance locations are within a fire hazard area (City of Santa Cruz April 2012-DEIR volume Figure 4.6-1). These locations include Moore Creek, Natural Bridges State Beach, Arroyo Seco, Neary Lagoon, Pogonip, DeLaveaga park, and Arana Gulch.

The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. These activities are primarily undertaken using hand crews, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal. The Project would not result in construction of new habitable structures. Thus, the Project would not expose structures to wildfire risks and would not expose people to significant injury or death, resulting in *no impact.* See also section VI.20 below.

10. Hydrology and Water Quality

(a) Water Quality. Urban runoff and other "non-point source" discharges are regulated by the 1972 Federal Clean Water Act (CWA), through the National Pollutant Discharge Elimination System (NPDES) permit program that has been implemented in two phases through the California RWQCBs. Phase I regulations, effective since 1990, require NPDES permits for

stormwater discharges for certain specific industrial facilities and construction activities, and for municipalities with a population size greater than 100,000. Phase II regulations expand the NPDES program to include all municipalities with urbanized areas and municipalities with a population size greater than 10,000 and a population density greater than 1,000 persons per square mile. Phase II regulations also expand the NPDES program to include construction sites of one to five acres.

The City of Santa Cruz (City) has developed a Storm Water Management Program (SWMP) in order to fulfill the requirements of the Phase II NPDES General Permit for Discharges of Storm Water from Small Municipal Separate Storm Sewer Systems (MS4) (General Permit) and to reduce the amount of pollutants discharged in urban runoff. In compliance with the Phase II regulations, the City's comprehensive SWMP is designed to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP) and to protect water quality (SOURCE V.1b-DEIR volume). In 1998, the City of Santa Cruz adopted an ordinance for "Storm Water and Urban Runoff Pollution Control" (Chapter 16.19 of the city's Municipal Code) as part of its Storm Water Management Program in accordance with the RWQCB's requirements. The ordinance identifies prohibited discharges and required Best Management Practices (BMPs) for construction and new development.

The State Water Board establishes beneficial uses and characterizes the water quality of surface water bodies based on watershed boundaries. Stormwater pollutants present in City watersheds include metals, solvents, paint, concrete, masonry products, detergents, vehicle fuels and fluids, oil and grease, pesticides and herbicides (organic compounds and nutrients), debris and litter, bacteria, pathogens and oxygen-demanding compounds, and sediment and silt. The June 2024 Water Quality Control Plan for the Central Coastal Basin (Basin Plan) is the Central Coast RWQCB's current master water quality control planning document (Central Coast RWQCB 2024, pending OAL approval). The Basin Plan establishes beneficial uses and water quality objectives for each of the water bodies in the Central Coast Region. The Clean Water Act requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the Clean Water Act. Clean Water Act Section 303(d) requires states to identify and prepare a list of water bodies that do not meet water quality objectives, and to establish total maximum daily loads (TMDLs) for each water body to ensure attainment of water quality objectives.

The primary pollutants of concern in the City watersheds are sediment and silt and fecal indicator bacteria. The City of Santa Cruz storm drain system (MS4) discharges into four water bodies that are currently on the 303(d) list of impaired water bodies, one of which is the San Lorenzo River. The San Lorenzo River is listed for: sediment, nutrients and pathogens. The City's SWMP addresses the primary pollutants of concern through City measures and BMPs to the Maximum Extent Practicable.

Impact Analysis. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization

structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. These activities are primarily undertaken using hand crews, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal. Some minor potential for erosion exists during sediment removal activities, although as discussed in section V1.7(b) above, the Project does not propose substantial grading or excavation that could lead to substantial erosion, and Project BMPs include erosion control measures. The Project does not involve construction of new structures that could lead to construction debris or materials being inadvertently carried into streams and watercourses or resulting in potential urban pollutants in stormwater runoff from new development. Therefore, the Project would not result in adverse impacts to water quality resulting in a *less-than-significant impact*.

(b) Groundwater. The City of Santa Cruz is located within the West Santa Cruz Terrace groundwater basin (SOURCE V.1b-DEIR Section 4.5), which is not a water source for the City's water supply, except for existing San Lorenzo River diversions. The proposed routine maintenance activities would not result in new development, would not utilize groundwater, and would not affect groundwater recharge. Therefore, the Project would have *no impact* on groundwater supplies or recharge.

(c-i, iii) Drainage. The proposed Project site is located adjacent to and within 27 streams and waterbodies throughout the City of Santa Cruz. The proposed routine maintenance activities would not result in new development or pervious surfacing, and would not result in an increase in stormwater runoff due to an increase in impervious surfaces. Therefore, the Project would not alter existing drainage patterns or result in substantial increases in runoff that would result in substantial on- or off-site erosion or siltation or exceed capacity of existing stormwater drainage facilities, resulting in a *no impact*.

(c-ii, d) Flood and Tsunami Zones. FEMA flood zones have been identified along portions of Moore Creek, San Lorenzo River, Branciforte Creek, Carbonera Creek, and Arana Creek (City of Santa Cruz April 2012-DEIR e Figure 4.7-1).A tsunami inundation zone has been identified along the City's coastline, and extends into the downtown area and up major streams, including a portion of Moore Creek and San Lorenzo River (City of Santa Cruz April 2012-DEIR Figure 4.7-2). However, the Project would not result in construction of new habitable structures and the proposed routine maintenance activities would not result in release of pollutants or contaminants to any stream or waterbody. Therefore, the Project would result in *no impact* related to release of pollutants in flood or tsunami zones.

(e) Conflict with Plans. Water quality objectives are included in the Water Quality Control Plan for the Central Coastal Basin (Basin Plan) for protection of surface water and groundwater quality in the Central Coast Region. As indicated above, the Basin Plan lists beneficial uses for surface waters and describes the water quality objectives that must be maintained to allow those uses. The proposed Project would not result in new discharges or conflict with provisions in the Basin Plan as the proposed routine maintenance activities would not result in permanent increases in runoff or affect water quality. Project BMPs include erosion control measures that would prevent water quality impacts during routine sediment removal activities or disking of the dry channel of San Lorenzo River for to improve storm flows. A sustainable groundwater

management plan for the area in which the Project is located has not yet been prepared. Therefore, the Project would not conflict with adopted water quality or groundwater plans.

11. Land Use and Planning

(a) Physical Division of Community. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include vegetation removal, sediment clearing, minor structural repair, and culvert and stormwater and wastewater infrastructure maintenance. The Project would not result in grading or construction of habitable structures or other structural development. Therefore, the proposed Project would not physically divide an established community, resulting in *no impact*.

(b) Conflicts with Local Policies/Plans. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include vegetation removal, sediment clearing, minor structural repair, and culvert and stormwater and wastewater infrastructure maintenance, using hand crews, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal. The Project would not result in grading or construction of habitable structures or other structural development. The Project includes BMPs to prevent erosion and protect water quality, and thus, would not conflict with City *General Plan 2030* policies regarding water quality protection.

The City's LCP and *General Plan 2030* includes a number of policies for protecting sensitive habitat areas and avoiding/mitigating potential impacts from development. These policies are intended to protect sensitive habitat areas and important vegetation communities and wildlife habitat and to prevent disturbance during breeding or loss of habitat due to construction and recreational activities. The General Plan also indicates that as part of the CEQA review process, future development projects would be required to evaluate and mitigate potential impacts to sensitive habitat (including special-status species) for sites located within or adjacent to these areas.

A biological resources assessment was conducted for the Project, and potentially less-than-significant impacts were with implementation of Project BMPs and regulatory compliance with AMMs in existing HCPs. Additionally, the Project is consistent with the City-wide Creeks and Wetlands Management Plan, which requires site-specific reviews prior to approval of activities that could impact potential resources. A biological resources assessment was conducted for the Project, and as explained in Section VI.4, potential impacts would be avoided or minimized with implementation of Project BMPs and required compliance with the City's OMHCP and ITP. Therefore, the Project would not cause a significant impact due to a conflict with a plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect, and would result in *no impact* related to conflicts with City policies and regulations.

12. Mineral Resources

There are no areas of known mineral resources within the City (City of Santa Cruz 2012-DEIR volume). Therefore, the Project would have *no impact* on mineral resources.

13. Noise

a) Exposure to Noise Standards in Excess of Standards. The proposed routine maintenance activities would not result in construction of new structures or introduction of persons that would result in a permanent increase in ambient noise levels. Thus, the Project would result in *no impact* related to generation of a substantial permanent increase in ambient noise levels that exceed adopted standards.

Impact Analysis. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. These activities are primarily undertaken using hand crews, small mechanized equipment, and occasionally rubber-tracked equipment for tule removal, which would not result in a substantial temporary increase in noise levels. The maintenance activities would be similar to typical landscape maintenance and equipment. Therefore, temporary, short-term increases in ambient noise due to some maintenance activities that use small mechanized equipment would result in a *less-than-significant impact*.

b) Exposure to or Generation of Vibration. The proposed maintenance activities would not require the use of explosives, pile driving, or other equipment that typically would generate excessive ground borne vibration or ground borne noise levels. Therefore, the proposed Project would result in n*o impact* regarding exposure to or generation of vibration.

(c) Location Near Airport. Neither the City nor any of the proposed maintenance sites are located in the vicinity or near a public airport or private airstrip, and the Project would not result in construction of new development. Therefore, *no impact* would occur regarding exposure to excessive noise levels related to airports.

14. Population and Housing

(a) Population Growth. The City had a population of 62,776 people as of January 1, 2024 (California Department of Finance 2024). The Project consists of routine maintenance activities along and within publicly-maintained streams, wetlands, and waterways throughout the city, including vegetation removal, debris clearing, vegetation control, and culvert and stormwater and wastewater infrastructure maintenance. No new residential, commercial, or infrastructure developments are proposed under the Project, and the Project would not directly result in increased population. While the Project may generate a limited number of temporary jobs

related to the maintenance activities, these jobs would be filled by the local workforce, and the Project would not indirectly induce population growth. Therefore, the Project would result in *no impact* related to population increases.

(b) Displacement of People or Housing. The proposed Project consists of routine maintenance activities along and within publicly-maintained waterways throughout the city. The Project would not result in demolition of existing housing. Therefore, the Project would not displace people or housing, resulting in *no impact*.

15. Public Services

(a-e) Fire, Police, Schools, Parks, and Other Public Services. The Project consists of routine maintenance activities along and within publicly-maintained waterways throughout the City. These activities consist of vegetation removal, sediment clearing, culvert and stormwater and wastewater infrastructure maintenance, and other similar efforts that do not involve the development of new housing, commercial uses, or expanded recreational facilities. As such, the Project would not lead to population growth or generate an increased demand for fire protection services, police protection services, schools, parks, or other public facilities, as the limited scope and temporary, short-term duration of the work would not generate additional demand on these services. Therefore, the Project would result in *no impact* to public services.

16. Recreation

(a) Increased Recreational Use and Deterioration of Facilities. The Project consists of routine maintenance activities along and within publicly-maintained waterways throughout the City. These maintenance activities include The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. The Project does not involve the development of new residential or commercial uses that would result in increased population and demand for and use of parks and recreational facilities. Therefore, the Project would result in *no impact* related to increased usage of parks and recreational facilities that could result in substantial physical deterioration of those facilities.

(b) Recreational Facility Impacts. The Proposed Project involves routine maintenance activities along and within publicly-maintained waterways throughout the City. The Project does not include new recreational facilities or require the construction or expansion of such facilities as the Project would not result in increased population or demand for parks and recreational facilities. Therefore, the Project would result in *no impact* related to the construction or expansion of recreational facilities that could have an adverse physical effect on the environment**.**

17. Transportation/Traffic

(a) Conflict with Circulation Plan, Policy, or Ordinance. The *General Plan 2030* includes goals, policies and actions that set forth comprehensive measures to reduce vehicle trips, increase vehicle occupancy, encourage use of alternative transportation modes, and promote alternative-sustainable land use patterns, all of which would help reduce vehicle trips, and avoid and minimize adverse impacts related to traffic. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. The Project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, or pedestrian facilities. The Project would not affect the performance of transit, bicycle, or pedestrian facilities. Therefore, the Project would not conflict with plans or policies regarding the City's circulation system and would result in *no impact*.

(b) Conflicts with State CEQA Guidelines. CEQA Guidelines section 15064.3, subdivision (b) codifies the switch from LOS to vehicle miles traveled (VMT) as the metric for transportation analysis pursuant to state legislation adopted in 2013. CEQA Guidelines section 15064.3(b) indicates that development projects that exceed an applicable VMT threshold of significance may indicate a significant impact.

In accordance with the amended CEQA Guidelines, the City has transitioned from intersection LOS formerly used for traffic impact analyses to VMT as the metric for determining potentially significant impacts. The City adopted a VMT transportation threshold on June 9, 2020 in accordance with CEQA and state requirements, as well as VMT Implementation Guidelines that are consistent with the State's VMT Guidelines. The threshold generally establishes that a project exceeding a level of 15 percent below the County-wide average VMT may result in a significant transportation impact. Updates to the City's Guidelines were adopted on June 14, 2022.

The proposed routine maintenance activities would result in small work crews at approximately 5-10 sites per year to carry out the maintenance requirements specified in a given year. Crews would generally include 2-4 people with a maximum of 10-12 working along the San Lorenzo River levee. Since the Project activities are already undertaken, the Project would not result in an increase in the number of increased trips and corresponding VMT associated with routine maintenance activities, and if so, the increase would be minor. Furthermore, VMT arising from maintenance activities would occur during a temporary and short-term period. Therefore, the Project would not conflict with or be inconsistent with City adopted VMT thresholds, resulting in *less-than-significant impact*.

(c) Design-Safety. The proposed Project would not result in changes to existing road designs. Therefore, the Project would not result in design elements that would substantially increase safety hazards, resulting in *no impact* related to project design that could result in substantial increases in hazards.

(d) Emergency Access. The proposed routine maintenance activities would have no effect on emergency access. Therefore, the Project would result in *no impact* related to emergency access. See also Section VI.9(f).

18. Tribal Cultural Resources

(a-b) Tribal Cultural Resources. The California Public Resources Code section 21084.2 establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." Assembly Bill (AB) 52 requires that California lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. AB 52 also specifies that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource (TCR) is a project that may have a significant effect on the environment. Defined in Section 21074(a) of the Public Resources Code, a TCR is a site feature, place, cultural landscape, sacred place, or object, which is of cultural value to a California Native American tribe and is either listed in or eligible for listing in the California Register of Historical Resources or a local historic register, or the lead agency, at its discretion, chooses to treat the resource as a TCR.

The City of Santa Cruz received formal requests for notification on proposed projects pursuant to Public Resources Code (PRC) section 21080.3.1 from two Native American tribes traditionally and culturally affiliated with the City. The City received the requests from the Amah Mutsun Tribe in April 2022 and from the Costanoan Rumsen Carmel Tribe in May 2024. Both of these tribes requested notification of development projects within the City pursuant to AB 52 requirements codified in Public Resources Code section 21080.3.1. Pursuant to PRC section 21080.3.1, the City provided notification of the Project to the Amah Mutsun Tribal Band and the Costanoan Rumsen Carmel Tribe on March 11, 2025. Neither tribe has contacted the City of Santa Cruz and requested consultation.

Impact Analysis. The proposed Project would not result in impacts to known tribal cultural resources. As discussed in Section VI.6 e, the Project would not result in significant impacts to archaeological resources due to limited scope and extent of the maintenance activities, which do not involve grading, excavation or significant land disturbance. Many of the maintenance locations are located within areas of archaeological sensitivity, and there is the potential for the discovery of unknown archaeological or tribal cultural resources during soil-disturbing activities, such as sediment removal. While no known TCRs are located on the Project sites, it is possible that ground-disturbing activities could encounter unknown subsurface resources, the discovery of which would be subject to procedures outlined in City regulations as described in section VI.6 that would avoid significant impacts. Therefore, the proposed Project would result in a *less-than-significant impact* to tribal cultural resources.

19. Utilities and Service Systems

(a) Relocation or Construction of Utilities. The Project would not result in construction of new development, and the annual routine maintenance activities would not require or result in the

construction of new or expanded wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities that could result in potential significant environmental effects. Similarly, the Proposed Project would not require or result in construction or extension of a sewer trunk line with capacity to serve new development. Therefore the Project would result in *no impact.*

(b-c) Water Supply and Wastewater Treatment. The Proposed Project involves routine maintenance activities along and within publicly-maintained waterways throughout the City. The Proposed Project would not result in new residential, commercial or other structural development, and thus, would not result in an increase in water demand or generation of wastewater. The Project would not require ongoing water use or result in a need for additional water supplies during normal, dry, or multiple dry years, and would not affect the ability of the wastewater treatment provider to serve existing or future demands. Therefore, the Project would have *no impact* on City water supplies or wastewater treatment.

(d-e) Solid Waste Disposal. The City's Resource Recovery Facility (RRF) is located approximately three miles west of the City off Highway 1 at 605 Dimeo Lane. The site covers 100 acres with 67 acres available for disposal use. The RRF only accepts municipal solid waste and serves as a sorting facility to remove any recyclable or composting materials. The recycling center accepts a variety of recyclable materials. The RRF is permitted to receive a total of 10,484,325 cubic yards (cy) of solid waste, including wood waste, tires, sludge (biosolids), mixed municipal wastes, metals, inert wastes, industrial wastes, green materials, dead animals, and construction/demolition wastes. As of July 31, 2021, the landfill had a remaining capacity of approximately 5.3 million cy (approximately 51%) and is anticipated to reach maximum final capacity in the year 2054 (City of Santa Cruz 2021c).

Impact Analysis. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year, with maintenance being conducted on average at 5-10 sites per year. Routine maintenance activities include: removal of obstructions, vegetation and sediment; vegetation control on stream banks; removal of invasive vegetation; planting riparian vegetation; repair of bank stabilization structures; culvert and stormwater and wastewater infrastructure maintenance; and burrowing rodent management along the San Lorenzo River levee. The Project would generate a minimal amount of solid waste, primarily consisting of vegetation, sediment, and debris given limited amounts of sediment and vegetation that are estimated to removed from a given site as summarized in Table 2. Such waste typically would be disposed of at the City's RRF, although some removed vegetation may be moved to a designated offsite location for decomposition or chipping. Given the limited amount of waste anticipated from the Project and the available capacity the City's RRF, there would be adequate capacity to accommodate the minimal solid waste generated. Therefore, the Project would result in a *less-than-significant impact* related to solid waste generation or landfill capacity. Similarly, the Project would not result in conflicts or non-compliance with federal, state or local regulations related to solid waste, resulting in *no impact*.

20. Wildfire

(a) Emergency Plans. As discussed in Section VI.9(f), the Project would not include any changes to existing public roadways that provide emergency access. Therefore, the Project would not substantially impair an adopted emergency response or evacuation plan and would result in *no impact*.

(b,d) Wildfire Impacts and Exposure. The City of Santa Cruz State Responsible Areas (SRA) have been evaluated in California Department of Forestry and Fire Protection (Cal Fire's) Hazard Severity Zone Map. The Fire Hazard Severity Zone (FHSZ) maps are developed using a science-based and field-tested model that assigns a hazard score based on the factors that influence fire likelihood and fire behavior. Many factors are considered such as fire history, existing and potential fuel (natural vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area. There are three levels of hazard in the State Responsibility Areas: moderate, high, and very high. Fire Hazard Severity Zone maps evaluate "hazard," not "risk". "Hazard" is based on the physical conditions that create a likelihood and expected fire behavior over a 30 to 50-year period without considering mitigation measures such as home hardening, recent wildfire, or fuel reduction efforts. "Risk" is the potential damage a fire can do to the area under existing conditions, accounting for any modifications such as fuel reduction projects, defensible space, and ignition resistant building construction (Cal Fire 2025).

The City is surrounded by Moderate and High SRA Fire Hazard Safety Zones (FHSZs), and the northern portion of the City, including portions of Moore Creek Preserve, Pogonip, and DeLaveaga Park are within a mapped Moderate .FHSZ (Cal Fire 2025). As indicated in Section VI.9(g), some Project locations are within a fire hazard area as mapped by the City, which are similar to the state FHSZs. The City has initiated a number of wildfire mitigation programs in the past at City greenbelt lands, including the DeLaveaga Vegetation Management Program. The City also continues to maintain and develop cooperative agreements with the County, UCSC, the California Department of Forestry, and other fire protection agencies to collaboratively avoid or minimize the threat from wildland/urban interface fires.

The Project would not result in construction of habitable structures, and the proposed maintenance activities would not create any conditions that could exacerbate wildfire risks or expose people or structures to significant risks including downslope or downstream flooding or landslides as a result of post-fire conditions. Therefore, the proposed Project would result in a *no impact.* See also section VI.9(g) above.

(c) Fire Hazards. The project would not require installation of infrastructure or utilities that would exacerbate fire risks. Therefore, the Project would not expose people or structures to a significant risk related to wildfires, resulting in *no impact*. See also section IV.9(g) above.

21. Mandatory Findings of Significance

(a) Quality of the Environment. The proposed Project would have no significant effect on cultural resources or result in elimination of important examples of major period of California history or prehistory with implementation of mitigation measures. The Project would have a

less-than-significant effect on biological resources with implementation of Project BMPs and compliance with the City's adopted OMHCP, and would not substantially reduce habitat, cause a wildlife population to drop below self-sustaining levels, threaten to eliminate a species or substantially reduce or restrict the range of a species. The Project would not degrade the quality of the environmental or otherwise substantially adversely affect fish and wildlife habitats or threaten to eliminate a plant or animal community. Therefore, the Project would result in a *less-than-significant impact*.

(b) Cumulative Impacts. The Project consists of routine maintenance activities along and within specified streams and watercourses within the City that are temporary, short-term in duration and vary in location from year to year. There are no known cumulative projects that to which the proposed Project would contribute to cumulative impacts. Annual vegetation management along the San Lorenzo River would not result in a long-term significant cumulative impact based on vegetation monitoring conducted over the past 10 years. As discussed in Section VI.4(b-c), monitoring along the lower San Lorenzo River show that willows readily recolonize the channel edge after management activities and continued to provide habitat over the 10 years, despite minor thinning and limbing activities occurring every year, resulting in no long-term loss of habitat value. Thus, the Project activities would not lead to a significant cumulative impact over successive years. Therefore, there are no known significant cumulative impacts to which the Project would contribute incremental effects.

(c) Substantial Adverse Effects on Human Beings. No environmental effects have been identified that would have direct or indirect adverse effects on human beings.

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Report Preparation

City of Santa Cruz

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Attachment A

Biological Resources Existing Conditions Report

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Filipina Warren
Public Works Operations Manager
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Subject: Biological Resources Existing Conditions Report for the City of Santa Cruz Routine Maintenance Program, Santa Cruz County, California

Dear Filipina:

At the request of the City of Santa Cruz (City), Dudek conducted a biological resources assessment for the City's Routine Maintenance Project (project), which proposes to conduct routine maintenance activities within 27 publicly maintained waterways and adjacent habitat throughout the City limits (Figure 1). Proposed activities include removal of obstructions around structures and facilities; removal of sediment, vegetation, and logs in channel beds; vegetation control on banks, planting riparian vegetation, removal of invasive plants; repair of bank stabilization structures; maintenance of culverts; and burrowing rodent management. The purpose of this biological resources analysis is to identify and describe existing biological resources, including vegetation communities, aquatic resources (e.g., wetlands), sensitive natural communities, and potential habitat for special-status plant and wildlife species. This letter report summarizes our findings and identifies potential sensitive biological resources within the Biological Study Area (BSA) that would need to be avoided during routine maintenance activities. Recommendations to avoid impacts on biological resources before and during proposed routine maintenance activities are provided below.

1 Project Site Locations and Description

The BSA consists of 27 watercourses within City limits, from Lombardi Gulch and Moore Creek east to Arana Gulch Creek and from Paradise Park south to Monterey Bay (Table 1). The BSA is within the Santa Cruz, Soquel, Laurel, and Felton U.S. Geological Survey 7.5-minute quadrangles.

At the time of the site visits, the BSA consisted of a mix of intermittent and perennial streams, marshes, and ponds with varying degrees of riparian canopy cover and plant species composition. South of Highway 1, most of the waterways were constrained by surrounding urban and commercial development and exhibited little to no native riparian canopy. North of Highway 1, the canopy cover becomes more robust as the drainages pass through steep gorges with low to no surrounding development. Surrounding land uses are primarily urban development or open space.

Table 1. Project Site Locations

Watercourse Name	Latitude/Longitude (at outlet)
Arana Gulch	36°58′26.14″N, 121°59'52.75″W
Arroyo de San Pedro Regaldo	36°58′47.85″N, 122°1′56.66″W
Arroyo Seco	36°56′59.46″N, 122°3′8.98″W
Bay Avenue Creek	36°58′11.12″N, 122°2′47.52″W
Bethany Creek	36°57′10.72″N, 122°2′15.65″W
Branciforte Creek	36°58′26.77″N, 122°1′21.27″W
Carbonera Creek	36°59′9.95″N, 122°0′52.22″W
Chrystal Gulch	36°58′23.97″N, 122°1′57.88″W
DeLaveaga Golf Course Pond	36°59′52.67″N, 121°59′59.51″W
Dodero Spring	36°58′39.63″N, 122°2′26.62″W
Hagemann Gulch	36°58′22.08″N, 122°0′1.30″W
Jessie Street Marsh	36°58′6.51″N, 122°0′49.08″W
Jordan Gulch	36°58′55.25″N, 122°3′10.50″W
Laurel Creek	36°57′55.66″N, 122°2′1.68″W
Lighthouse Drainage	36°57′8.14″N, 122°1′45.43″W
Lombardi Gulch	36°58′2.03″N, 122°6′37.66″W
Moore Creek	36°57′1.35″N, 122°3′30.48″W
Natural Bridges Creek	36°57′4.82″N, 122°3′24.83″W
Ocean Villa Creek	36°58′4.90″N, 122°0′48.03″W
Ojos de Agua	36°58′30.35″N, 122°2′30.50″W
Pasatiempo Creek	36°58′59.35″N, 122°1′35.66″W
Pilkington Creek	36°57′52.24″N, 122°0′33.11″W
Pogonip Creek	36°59′19.55″N, 122°1′45.34″W
Redwood Creek	36°59′48.24″N, 122°2′15.63″W
San Lorenzo River	36°57′47.62″N, 122°0′46.66″W
Wagoner Seep	36°58′44.05″N, 122°2′4.54″W
Woods Creek/Dog Leg	36°58′5.73″N, 122°0′11.74″W
Westlake Pond	36°58′32.34″N, 122°2′43.40″W
Neary Lagoon	36°57′47.42″N, 122°1′34.82″W

Topography of the BSA consists of hillsides and gorges of the Santa Cruz Mountains to the north, descending steeply south to Highway 1. South of Highway 1, the landscape slopes more gradually southward to Monterey Bay. The elevation ranges from approximately 4 to 540 feet above mean sea level, with the highest elevations in the hills around The Mystery Spot (Branciforte Road) and the lowest elevations along West Cliff Drive at the edge of Monterey Bay. Santa Cruz County experiences a Mediterranean climate with warm, dry summers and cool, wet winters. The average annual maximum temperature is 68.9°F, and the average minimum temperature is 45°F (WRCC 2025). Average annual precipitation is 29.33 inches, most of which falls between October and April (WRCC 2025).

2 Methods

2.1 Literature Review

Special-status species potentially occurring in the BSA were identified through a literature search of the following sources: the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) online planning tool (USFWS 2025a), the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) (CDFW 2025a), and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2025a). Searches of the above-referenced databases were completed for the five U.S. Geological Survey 7.5-minute quadrangles surrounding the BSA: Davenport, Felton, Laurel, Santa Cruz, and Soquel. In addition to the above literature searches, Dudek consulted with Garry Kittleson of Kittleson Environmental Consulting Services to identify additional special-status species occurrences (Kittleson, pers. comm., 2025).

For this report, special-status species are defined as (1) plants or wildlife listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (FESA); (2) plants or wildlife listed or candidates for listing as threatened or endangered under the California Endangered Species Act (CESA); (3) wildlife designated as Fully Protected under Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code; (4) wildlife designated as a California Species of Special Concern by the CDFW; or (5) plants assigned a California Rare Plant Rank of 1A, 1B, 2A or 2B by the CNPS. The California Rare Plant Ranking (CRPR) system includes six rarity and endangerment ranks for categorizing plant species of concern, as follows:

- CRPR 1A – Plants presumed to be extinct in California
- CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere
- CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere
- CRPR 2B – Plants that are rare, threatened, or endangered in California, but more common elsewhere
- CRPR 3 – Plants about which more information is needed (a review list)
- CRPR 4 – Plants of limited distribution (a watch list)

Plants with CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of California Environmental Quality Act (CEQA) Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA review documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380, but these species may be evaluated on a case-by-case basis.

2.2 Field Survey

Following the literature review, Dudek Biologist Tara Johnson-Kelly conducted a reconnaissance-level field survey of several project locations in the BSA to assess habitat for special-status species. The surveys were sufficient to identify and describe existing biological resources, including vegetation communities; wildlife habitat; aquatic resources (e.g., wetlands); and sensitive resources, such as vegetation communities considered sensitive by CDFW (2025b) and habitat potentially supporting special-status plant and wildlife species. Determinations for the potential of special-status species to occur were based on a review of habitat types, soils, and elevation preferences, as well as the known geographic range of each species and nearby documented occurrences. Species

were determined "not expected to occur" when the BSA was clearly outside the known geographic range of the species or did not support suitable habitat.

The biologist conducted the survey on March 28, 2025 (Table 2). The surveys included ground-truthing vegetation communities and land cover types within the BSA as previously mapped by the Santa Clara and Santa Cruz Counties VegCAMP Vegetation Map (CDFW 2025c) and assessing habitat suitability for special-status species. The field surveys were conducted using a combination of vehicle and pedestrian surveys within as much of the BSA as could be seen from existing access roads. Representative photographs are included in Attachment A, Representative Site Photographs.

Table 2. Field Survey Conditions

Date	Survey Hours	Project Site(s) Surveyed	Conditions	Biologists
3/28/2025	12:00 p.m.-5:30 p.m.	Moore Creek, Natural Bridges, Westlake Pond, Neary Lagoon, Branciforte Creek, Arana Gulch	59-60°F; 20% cloud cover; 6-13 mph wind	Tara Johnson-Kelly

All plant species were identified to the lowest taxonomic group possible. Nomenclature for plant species follow the Jepson Manual, Vascular Plants of California, Second Edition (Jepson Flora Project 2025). Wildlife species detected by sight, calls, tracks, scat, or other signs were recorded into a field notebook and/or a digital survey form. Wildlife species not observed but expected to use the BSA were identified based on known habitat preferences and regional distribution.

No formal wetland delineation or focused surveys for special-status plant or animal species were conducted. The field surveys were sufficient to generally describe aquatic features in the BSA potentially subject to regulation by the U.S. Army Corps of Engineers (USACE), San Francisco Bay Regional Water Quality Control Board (RWQCB), and/or CDFW.

3 Existing Conditions

3.1 Vegetation Communities and Land Cover Types

Overall, the BSA consists of 27 waterways ranging from urban drainages to natural creeks to major rivers surrounded by dense urban development in the lower elevations and a variety of forest types, chaparral, and grassland in the upper elevations. During the field surveys, 17 vegetation communities or land cover types (described below) were observed and/or identified through desktop review using the classifications described in the California Native Plant Society's A Manual of California Vegetation Online (CNPS 2025b).

3.1.1 Tree-dominated Vegetation Communities

3.1.1.1 Coast Live Oak Forest and Woodland

The coast live oak forest and woodland alliance is characterized by coast live oak (*Quercus agrifolia*) being dominant or co-dominant in the tree canopy with bigleaf maple (*Acer macrophyllum*), Pacific madrone (*Arbutus menziesii*),

black walnut (*Juglans californica*), blue oak (*Quercus douglasii*), Engelmann oak (*Quercus engelmannii*), California black oak (*Quercus kelloggii*), valley oak (*Quercus lobata*) and California bay laurel (*Umbellularia californica*). This alliance has an open to continuous canopy less than 30 meters (m) in height, with a sparse to intermittent shrub canopy and a sparse or grassy herbaceous layer (CNPS 2025b). The coast live oak forest and woodland alliance is not classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by coast live oak alongside scattered California bay trees, with an understory of toyon and various grasses and herbs. This alliance is found along Lombardi Gulch, Moore Creek, Arroyo Seco, Neary Lagoon, Arroyo de San Pedro Regaldo, Pogonip Creek, San Lorenzo River, Ocean Villa Creek, Jessie Street Creek, Branciforte Creek, Carbonera Creek, Woods Creek/Dog Leg, Hagemann Gulch, and Arana Gulch (CDFW 2025c).

3.1.1.2 Eucalyptus–Tree of Heaven–Black Locust Groves

The eucalyptus–tree of heaven–black locust groves semi-natural alliance is characterized by Australian blackwood (*Acacia melanoxylon*), *Acacia* spp., tree of heaven (*Ailanthus altissima*), *Eucalyptus* spp. or black locust (*Robinia pseudoacacia*) dominant in the tree canopy. This alliance has an open to continuous canopy less than 60 m in height with a sparse to intermittent shrub layer and sparse to intermittent herbaceous layer. Eucalyptus groves were intentionally introduced to California for use as lumber and windbreaks and are often located along ridgelines or bottomlands adjacent to watercourses (CNPS 2025b). This semi-natural alliance is not considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by Tasmanian bluegum (*Eucalyptus globulus*) with an understory of poison oak (*Toxicodendron diversilobum*) and California blackberry (*Rubus ursinus*). This alliance is found at Natural Bridges, Moore Creek, Arroyo Seco, Arroyo de San Pedro Regaldo, Pogonip Creek, Ocean Villa Creek, Jessie Street Creek, Branciforte Creek, Woods Creek/Dog Leg, Hagemann Gulch, and Arana Gulch (CDFW 2025c)

3.1.1.3 Bigleaf Maple Forest and Woodland

The bigleaf maple forest and woodland alliance is characterized by bigleaf maple dominant or co-dominant in the canopy with white fir (*Abies concolor*), white alder (*Alnus rhombifolia*), red alder (*Alnus rubra*), incense cedar (*Calocedrus decurrens*), Pacific dogwood (*Cornus nuttallii*), Sitka spruce (*Picea sitchensis*), Douglas fir (*Pseudotsuga menziesii*), canyon live oak (*Quercus chrysolepis*), California black oak, valley oak, redwood (*Sequoia sempervirens*), Pacific yew (*Taxus brevifolia*) and California bay laurel. This alliance has an intermittent to continuous canopy less than 75 m in height with a sparse to abundant herbaceous layer and infrequent to well-developed shrub layer. This vegetation community occurs along stream benches and lower slopes near seeps (CNPS 2025b). This association is classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by bigleaf maple and red alder. This alliance is found at Moore Creek, Jordan Gulch, Arroyo de San Pedro Regaldo, Pogonip Creek, Redwood Creek, Branciforte Creek, Carbonera Creek, and Arana Gulch (CDFW 2025c).

3.1.1.4 Monterey Cypress–Monterey Pine Woodland Stands

Monterey cypress–Monterey pine woodland stands semi-natural alliance is characterized by Monterey cypress (*Hesperocyparis macrocarpa*), Canary Island pine (*Pinus canariensis*), Aleppo pine (*Pinus halepensis*), stone pine (*Pinus pinea*), and/or Monterey pine (*Pinus radiata*) dominant in the tree canopy with coastal wattle (*Acacia cyclops)* and *Eucalyptus* spp. This alliance has an open to continuous canopy less than 50 m in height with a sparse to

continuous shrub later and variable herbaceous layer. These groves were ornamentally planted as groves and windbreaks and have become naturalized in coastal areas (CNPS 2025b). This semi-natural alliance is not considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). In the BSA, this vegetation community is dominated by Monterey cypress and Monterey pine and occurs along Moore Creek, Arana Gulch, and the DeLaveaga Golf Course Pond (CDFW 2025c).

3.1.1.5 Black Cottonwood Forest and Woodland

The black cottonwood forest and woodland alliance is characterized by black cottonwood (*Populus trichocarpa*) dominant or co-dominant in the canopy with white fir, bigleaf maple, box-elder (*Acer negundo*), grey alder (*Alnus incana*), white alder, red alder, Oregon ash (*Fraxinus latifolia*), western juniper (*Juniperus occidentalis*), Pacific wax myrtle (*Morella californica*), lodgepole pine (*Pinus contorta* ssp. *murrayana*), Jeffrey pine (*Pinus jeffreyi*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), quaking aspen (*Populus tremuloides*), coast live oak, sandbar willow (*Salix exigua*), coastal willow (*Salix hookeriana*), red willow (*Salix laevigata*), arroyo willow (*Salix lasiolepis*), Pacific willow (*Salix lucida* ssp. *lasiandra*), yellow willow (*Salix lutea*), and Scouler's willow (*Salix scouleriana*). This alliance has an open to continuous canopy less than 30 m in height with an open to continuous shrub layer and sparse to continuous herbaceous layer. This vegetation community occurs on seasonally flooded stream banks and alluvial terraces (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by black cottonwood, alders, and willows and occurs along Moore Creek, Pogonip Creek, San Lorenzo River, Branciforte Creek, Carbonera Creek, and Arana Gulch (CDFW 2025c).

3.1.1.6 Redwood Forest and Woodland

Redwood forest and woodland (*Sequoia sempervirens* alliance) is dominated or co-dominated by redwood in the tree canopy with other tree species including bigleaf maple, red alder, Pacific madrone, golden chinquapin (*Chrysolepis chrysophylla*), tanoak (*Notholithocarpus densiflorus*), Douglas fir, and California bay laurel. This alliance is characterized by trees less than 120 meters in height with intermittent to continuous canopy and a variable shrub understory and herbaceous layer (CNPS 2025b). This association is classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this community is found along Moore Creek, Jordan Gulch, Arroyo de San Pedro Regaldo, Pogonip Creek, Redwood Creek, Carbonera Creek, Branciforte Creek, and Arana Gulch (CDFW 2025c).

3.1.1.7 Douglas Fir–Tanoak Forest–Madrone Forest and Woodland

The Douglas fir–tanoak forest–madrone forest and woodland alliance is dominated or co-dominated by Douglas fir in the tree canopy with other hardwoods including tanoak, Pacific madrone, golden chinquapin, canyon live oak, California black oak, California bay laurel, bigleaf maple, incense cedar, Port Orford cedar (*Chamaecyparis lawsoniana*), sugar pine (*Pinus lambertiana*), ponderosa pine (*Pinus ponderosa*) and Pacific yew. This alliance is characterized by an intermittent to continuous, multi-tiered canopy less than 75 m in height with a sparse to intermittent shrub layer and sparse to abundant herbaceous layer. This vegetation community is found in a variety of places including ridges, slopes, terraces, and stream benches with sandstone and schist soils (CNPS 2025b). This alliance is classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by Douglas fir with tanoak and evergreen

huckleberry (*Vaccinium ovatum*) and occurs along Arroyo de San Pedro Regaldo, Pogonip Creek, Redwood Creek, and Arana Gulch (CDFW 2025c).

3.1.1.8 California Sycamore–Coast Live Oak Riparian Woodlands

The California sycamore–coast live oak riparian woodland alliance is characterized by a tree canopy is dominated or co-dominated by California sycamore and/or coast live oak with white alder, black walnut, Fremont cottonwood, valley oak, sandbar willow, Goodding's willow (*Salix gooddingii*), red willow, arroyo willow, yellow willow, Peruvian pepper (*Schinus molle*) and California bay laurel. This alliance is characterized by an open to intermittent canopy less than 35 m in height with an open to intermittent shrub layer and sparse or grassy herbaceous layer. This vegetation community occurs in rocky or cobbly floodplains and intermittent streams (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is found along the San Lorenzo River (CDFW 2025c).

3.1.1.9 Box-Elder Forest and Woodland

Box-elder forest and woodland alliance is characterized by box-elder as dominant or co-dominant in the canopy with white alder, Oregon ash, California sycamore, Fremont cottonwood, black cottonwood, valley oak, Goodding's willow and other willows (*Salix* spp.). This vegetation community has an intermittent to continuous two-tiered canopy less than 20 m in height with an open to intermittent shrub layer and sparse to abundant herbaceous layer. It is often found in bottomlands and streams (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by box-elder and California blackberry and is found along San Lorenzo River, Carbonera Creek, and Branciforte Creek (CDFW 2025c).

3.1.1.10 White Alder Groves

White alder groves alliance is dominated or co-dominated by white alder in the tree canopy with bigleaf maple, incense cedar, Port Orford cedar, tanoak, California sycamore, Fremont cottonwood, black cottonwood, Douglas fir, canyon live oak, valley oak, willows, and California bay laurel. This vegetation community has an open to continuous two-tiered canopy less than 35 m in height with a sparse to continuous shrub layer and variable herbaceous layer. This alliance is found along riparian corridors, stream banks, and floodplains (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community occurs along Carbonera Creek (CDFW 2025c).

3.1.1.11 Goodding's Willow–Red Willow Riparian Woodland and Forest

The Goodding's willow–red willow riparian woodland and forest alliance is dominated or co-dominated by Goodding's willow and/or red willow in the tree or shrub canopy with box-elder, California buckeye (*Aesculus californica*), white alder, incense cedar, Oregon ash, gray pine (*Pinus sabiniana*), California sycamore, Fremont cottonwood, coast live oak, canyon live oak, valley oak, Pacific willow (*Salix lucida* var. *lasiandra*) or California fan palm (*Washingtonia filifera*). This alliance has an open to continuous canopy less than 30 m in height with a sparse to continuous shrub layer and variable herbaceous layer. The shrub layer is comprised of mulefat (*Baccharis salicifolia*), red twig dogwood (*Cornus sericea*), California rose (*Rosa californica*), Himalayan blackberry (*Rubus armeniacus*), sandbar willow, arroyo willow, or elderberry (*Sambucus nigra*). This vegetation community is found on

terraces and floodplains of streams and lake edges (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community occurs along Branciforte Creek and Arana Gulch (CDFW 2025c).

3.1.2 Shrub-dominated Vegetation Communities

3.1.2.1 Arroyo Willow Thickets

Arroyo willow thickets alliance is dominated or co-dominated by arroyo willow in the tall shrub or low tree canopy with bigleaf maple, coyote brush (*Baccharis pilularis*), mulefat, buttonbush (*Cephalanthus occidentalis*), red twig dogwood, Pacific wax myrtle, California sycamore, Fremont cottonwood, black cottonwood, willows, and elderberry. This vegetation community is characterized as a shrubland with an open to continuous canopy less than 10 m in height with emergent trees present at low cover and a variable herbaceous layer. This community is found along drainages, seeps, and stream banks (CNPS 2025b). This alliance is considered a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this alliance occurs along Moore Creek, Arroyo Seco, Neary Lagoon, San Lorenzo River, Woods Creek/Dog Leg, Hagemann Gulch, and Arana Gulch (CDFW 2025c).

3.1.2.2 Coyote Brush Scrub

The coyote brush scrub alliance is dominated or co-dominated by coyote brush along with other shrub species including California coffeeberry (*Frangula californica*), blue blossom ceanothus (*Ceanothus thyrsiflorus*), sticky monkey-flower (*Diplacus aurantiacus*), common deerweed (*Acmispon glaber*), California blackberry, and poison oak. Trees including coast live oak or California bay laurel may be present at low cover. This alliance is characterized by a variable canopy of shrubs less than 3 meters in height with a variable herbaceous layer (CNPS 2025b). This alliance is not classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this community is found along Moore Creek, Jordan Gulch, Arroyo de San Pedro Regaldo, Pogonip Creek, and Lombardi Gulch (CDFW 2025c).

3.1.2.3 California Sagebrush–Purple Sage Scrub

The California sagebrush–purple sage scrub shrubland alliance is dominated or co-dominated by California sagebrush (*Artemisia californica*) and/or purple sage (*Salvia leucophylla*) in the shrub canopy alongside chamise (*Adenostoma fasciculatum*), coyote brush, and poison oak, among others. Emergent trees, such as black walnut or coast live oak, may be present at low cover. This alliance is characterized by an intermittent to continuous shrub canopy less than 2 meter in height with a seasonally and annually variable herbaceous layer. This vegetation community is found along alluvial slopes. (CNPS 2025b). This alliance is not classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this community is located along Lombardi Gulch (CDFW 2025c).

3.1.2.4 Fields of Fat Hen and Brass Buttons

The fields of fat hen and brass buttons herbaceous semi-natural alliance is dominated or co-dominated by fat hen (*Atriplex prostrata*) or brass buttons (*Cotula coronopifolia*) with saltmarsh bulrush (*Bolboschoenus maritimus*), leafy goosefoot (*Chenopodium foliosum*), saltgrass (*Distichlis spicata*), annual beard-grass (*Polypogon monspeliensis*)

and/or western sea-purslane (*Sesuvium verrucosum*) in an intermittent to continuous herbaceous layer less than 1 m in height. This vegetation community is found in brackish marshes and saline mudflats (CNPS 2025b). This alliance is not classified as a sensitive vegetation community on CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this community is located at Jessie Street Marsh (CDFW 2025c).

3.1.3 Herb-dominated Vegetation Communities

3.1.3.1 Wild Oats and Annual Brome Grassland

The wild oats and annual brome grasslands alliance is characterized by wild oat (*Avena fatua*), brome grasses (*Bromus spp.*), and other non-native grass and oat species being dominant or co-dominant in the herbaceous layer. This alliance has open to continuous cover with herbs less than 1.2 m in height (CNPS 2025b). The wild oats and annual brome grasslands vegetation community is not identified as a sensitive vegetation community in CDFW's California Natural Community List (CDFW 2025b). Within the BSA, this vegetation community is dominated by wild oat and brome species. This alliance is found intermittently throughout the BSA along Lombardi Gulch, Moore Creek, Arroyo de San Pedro Regaldo, San Lorenzo River, Jessie Street Marsh, and Branciforte Creek (CDFW 2025c).

3.1.4 Developed Land Cover Types

3.1.4.1 Urban

Urban land cover refers to areas that have been constructed on or otherwise physically altered to the point where vegetation is no longer present. Urban or developed areas are characterized by permanent or semi-permanent structures, hardscapes, and landscaped areas. Within the BSA, the urban land cover consists of residential developments, industrial centers, paved or gravel roads and utility structures. This land cover primarily supports ruderal or landscaped vegetation where present. All 27 watercourses are adjacent to urban landcover at some point along their lengths, particularly south of Highway 1 (CDFW 2025c).

3.2 Preliminary Mapping of Aquatic Features

Several jurisdictional aquatic features were observed during the March 2025 field surveys. These features were identified as natural rather than constructed drainages, although some had segments of corrugated pipe where the drainage crossed below a road or other constructed feature. The drainages generally conveyed water into San Lorenzo River or into Monterey Bay. All drainages contained distinct bed and banks. All drainages contained flowing water at the time of the field survey.

The BSA contains 26 named streams or rivers with varying levels of channelization: Arana Gulch, Arroyo de San Pedro Regaldo, Arroyo Seco, Bay Avenue Creek, Branciforte Creek, Carbonera Creek, Chrystal Gulch, Dodero Spring Creek, Hagemann Gulch, Jessie Street, Jordan Gulch, Laurel Creek, Lighthouse Drainage, Lombardi Gulch, Moore Creek, Natural Bridges Creek, Ocean Villa Creek, Ojos de Agua, Pasatiempo Creek, Pilkington Creek, Pogonip Creek, Redwood Creek, San Lorenzo River, Wagner Seep, and Woods Creek/Dog Leg. These features are under U.S. Army Corps of Engineers (USACE), San Francisco Bay RWQCB, and CDFW jurisdiction under their respective statutes: Section 404 (USACE) and 401 (RWQCB) of the federal Clean Water Act, the Porter-Cologne Water Quality Control Act (RWQCB), and Section 1602 of the California Fish and Game Code (CDFW). The BSA also contains several bodies of open water, including Westlake Pond, Neary Lagoon, and the DeLaveaga Golf Course Pond. Of these,

Westlake Pond and Neary Lagoon have connections to jurisdictional creeks or drainages, Laurel Creek, which drains to Monterey Bay.

3.3 Soils and Hydrology

According to the Natural Resources Conservation Service (NRCS), 59 soil types are present in the BSA (USDA 2025) (Table 3). Four soil types—Aquents, flooded; Fluvaquentic Haploxerolls-Aquic Xerofluvents complex series; Tierra-Watsonville complex series; and Watsonville loam series—are considered hydric soils (i.e., soils commonly associated with wetlands and streams) (USDA 2025).

Table 3. Soils

Soil Substrate
100 – Aptos loam, warm, 15% to 30% slopes
101 – Aptos loam, warm, 30% to 50% slopes
103 – Aquents, flooded[1]
104 – Baywood loamy sand, 0% to 2% slopes
105 – Baywood loamy sand, 2% to 15% slopes
106 – Baywood loamy sand, 15% to 30% slopes
109 – Beaches
110 – Ben Lomond sandy loam, 5% to 15% slopes
111 – Ben Lomond sandy loam, 15% to 50% slopes
112 – Ben Lomond sandy loam, 50% to 75% slopes
113 – Ben Lomond-Catelli-Sur complex, 30% to 75% slopes
114 – Ben Lomond-Felton complex, 30% to 50% slopes
115 – Ben Lomond-Felton complex, 50% to 75% slopes
116 – Bonnydoon loam, 5% to 50% slopes, MLRA 4B
117 – Bonnydoon loam, 30% to 50% slopes
118 – Bonnydoon-Rock outcrop complex, 50% to 85% slopes
123 – Cropley silty clay, 2% to 0% slopes, MLRA 14
124 – Danville loam, 0% to 2% slopes
125 – Danville loam, 2% to 9% slopes
127 – Diablo clay, 15% to 30% slopes, MLRA 15
129 – Elder sandy loam, 0% to 2% slopes, MLRA 14
130 – Elder sandy loam, 2% to 9% slopes, MLRA 14
131 – Elder sandy loam, 9% to 15% slopes, MLRA 14
132 – Elkhorn sandy loam, 0% to 2% slopes
133 – Elkhorn sandy loam, 2% to 9% slopes
134 – Elkhorn sandy loam, 9% to 15% slopes
135 – Elkhorn sandy loam, 15% to 30% slopes
136 – Elkhorn-Pfieffer complex, 30% to 50% slopes
139 – Fluvaquentic Haploxerolls-Aquic Xerofluvents complex, 0% to 15% slopes[1]
142 – Lompico-Felton complex, 5% to 30% slopes
143 – Lompico-Felton complex, 30% to 50% slopes, MLRA 4B

Table 3. Soils

Soil Substrate
144 – Lompico-Felton complex, 50% to 75% slopes, MLRA 4B
145 – Lompico variant loam, 5% to 30% slopes
146 – Los Osos loam, 5% to 15% slopes
147 – Los Osos loam, 15% to 30% slopes, moist
148 – Los Osos loam, 30% to 50% slopes, moist
151 – Maymen stony loam, 30% to 75% slopes
153 – Maymen-Rock outcrop complex, 50% to 75% slopes
157 – Nisene-Aptos complex, 30% to 50% slopes
158 – Nisene-Aptos complex, 50% to 75% slopes
159 – Pfieffer gravelly sandy loam, 15% to 30% slopes
160 – Pfieffer gravelly sandy loam, 30% to 50% slopes
161 – Pinto loam, 0% to 2% slopes
162 – Pinto loam, 2% to 9% slopes
164 – Pits-Dumps complex
170 – Soquel loam, 0% to 2% slopes
171 – Soquel loam, 2% to 9% slopes
172 – Soquel loam, 9% to 15% slopes
173 – Sur-Catelli complex, 50% to 75% slopes
174 – Tierra-Watsonville complex, 15% to 30% slopes[1]
175 – Tierra-Watsonville complex, 30% to 50% slopes[1]
176 – Watsonville loam, 0% to 2% slopes[1]
177 – Watsonville loam, 2% to 15% slopes[1]
178 – Watsonville loam, thick surface, 0% to 2% slopes[1]
179 – Watsonville loam, thick surface, 2% to 15% slopes[1]
180 – Watsonville loam, thick surface, 15% to 30% slopes[1]
182 – Zayante coarse sand, 5% to 30% slopes
183 – Zayante coarse sand, 30% to 50% slopes
184 – Zayante-Rock outcrop complex, 15% to 75% slopes

Sources: USDA 2025.
[1] Hydric soil.

Some soils in the BSA have been degraded over time from urban development and the introduction of petrochemicals from roadway runoff, particularly south of Highway 1.

The BSA is in the San Vicente Creek-Frontal Pacific Ocean Hydrologic Unit (HUC 12: 180500060304), the Monterey Bay Hydrologic Unit (HUC 12: 180600150305), and the Carbonera Creek—San Lorenzo River Hydrologic Unit (HUC 12: 180600150203) (USGS 2025). The BSA is situated in a natural basin that receives runoff from the Santa Cruz Mountains flowing into creeks and rivers that generally drain toward Monterey Bay or the San Lorenzo River, which drains to Monterey Bay, a traditional navigable water of the United States.

3.4 Plant and Wildlife Species Observed

The BSA contains both non-native and native species; of the plants identifiable to species, a total of 23 species (21 native [91%] and 2 non-native [9%]) were recorded (Attachment B, Plant Species Compendium). Common plant species included coast live oak, Tasmanian bluegum, arroyo willow, coyote brush, and great horsetail, among others.

Wildlife species observed or expected to occur within the BSA are those adapted to oak woodlands, coniferous forests, riparian woodland, grassland, urban landscapes, and edges that experience moderate to high levels of human activity. A total of 31 wildlife species were observed during the field survey. Red-eared sliders (*Trachemys scripta elegans*) and western fence lizards (*Sceloporus occidentalis*) were common reptile species observed, and other species such as California kingsnake (*Lampropeltis californiae*) and aquatic gartersnake (*Thamnophis atratus* spp.) are likely to occur. While no amphibian species were observed, common species such as Sierran treefrog (*Pseudacris sierra*) and California toad (*Anaxyrus boreas halophilus*) are likely to occur. San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) nests were observed, and common species such as mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*) and western gray squirrel (*Sciurus griseus*) are likely to occur. Common bird species observed during the site visit included house finch (*Haemorhous mexicanus*), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), ruby-crowned kinglet (*Corthylio calendula*), California thrasher (*Toxostoma redivivum*), hairy woodpecker (*Dryobates villosus*), and dark-eyed junco (*Junco hyemalis*), among others. A full list of wildlife species observed during the survey is included in Attachment C, Wildlife Species Compendium.

4 Results

4.1 Special-Status Plant and Wildlife Species

This section summarizes known occurrences of special-status species in the BSA vicinity and describes the potential for special-status species occurrence in the BSA.

4.1.1 Special-Status Plant Species

The CNDDB and CNPS Inventory of Rare and Endangered Plants identified 70 special-status plant species as occurring or potentially occurring in the BSA vicinity (Attachment D, Special-Status Plant Species Potential to Occur). Of these, 55 were eliminated from further consideration due to a lack of suitable habitat or edaphic conditions (i.e., alkaline or serpentine soils), extent of habitat degradation within the BSA (e.g., regular mowing, presence of invasive species, previous disturbance), or the location of the BSA outside a species' known range. Five of the remaining 15 species—deceiving sedge (*Carex saliniformis*), johnny-nip (*Castilleja ambigua* var. *ambigua*), Ben Lomond spineflower (*Chorizanthe pungens* var. *hartwegiana*), tear drop moss (*Dacryophyllum falcifolium*) and Point Reyes horkelia (*Horkelia marinensis*)—have a low potential to occur within the BSA and are not discussed further. The ten remaining species have a moderate or high potential to occur within the BSA based on the presence of suitable vegetation types in each area (Table 4). Additional information is provided in Attachment D. The BSA falls within designated critical habitat for Santa Cruz tarplant (Arana Gulch; 67FR63968 64007) and robust spineflower (Pogonip and Branciforte Creek; 67FR36822 36845) (USFWS 2025b).

Table 4. Special-Status Plants with Moderate to High Potential to Occur

Species	Status* (Federal/State/CRPR)	General Locations within the BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
Anderson's manzanita *Arctostaphylos andersonii*	None/None/1B.2	Moore Creek	—	—	—	—	—
robust spineflower *Chorizanthe robusta* var. *robusta*	FE/None/1B.1	—	—	Branciforte Creek Pogonip Creek	--	Arana Gulch	—
Santa Cruz tarplant *Holocarpha macradenia*	FT/SE/1B.1	—	—	—	—	Arana Gulch	—
Kellogg's horkelia *Horkelia cuneata* var. *sericea*	None/None/1B.1	Moore Creek	--	—	—	—	—
harlequin lotus *Hosackia gracilis*	None/None/4.2	Moore Creek	—	—	—	—	—
Mt. Diablo cottonweed *Micropus amphibolus*	None/None/3.2	—	—	—	—	—	Lombardi Gulch
elongate copper moss *Mielichhoferia elongata*	None/None/4.3	Natural Bridges	—	—	—	—	—
Hickman's popcorn-flower *Plagiobothrys chorisianus* var. *hickmanii*	None/None/4.2	—	—	Carbonera Creek Branciforte Creek	—	—	—

Table 4. Special-Status Plants with Moderate to High Potential to Occur

Species	Status* (Federal/State/CRPR)	General Locations within the BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
San Francisco popcorn-flower *Plagiobothrys diffusus*	None/SE/1B.1	Moore Creek	—	—	—	—	—
Santa Cruz clover *Trifolium buckwestiorum*	None/None/1B.1	—	—	San Lorenzo River Redwood Creek Pogonip Creek	—	—	—

Note: Additional information is in Attachment D, Special-Status Plant Species Potential to Occur,
***Status:**
FE: Federally Endangered
FT: Federally Threatened
FC: Federal Candidate for listing
SE: State Endangered
ST: State Threatened
SC: State Candidate for listing
SR: State Rare
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known).

4.1.2 Special-Status Wildlife Species

The CNDDB and USFWS IPaC tool identified 44 special-status wildlife species as occurring or potentially occurring in the BSA vicinity. Of these, 13 species were eliminated from consideration due to the absence of suitable habitat in the BSA or the BSA's location outside of their known range (Attachment E, Special-Status Wildlife Species Potential to Occur). Sixteen (16) of the remaining 31 species—foothill yellow-legged frog - central coast DPS (*Rana boylii* pop. 4), tricolored blackbird (*Agelaius tricolor* [nesting colony]), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), western snowy plover (*Charadrius nivosus nivosus),* yellow rail (*Coturnicops noveboracensis*), black swift (*Cypseloides niger*), bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus),* bank swallow (*Riparia riparia* [nesting]), pallid bat (*Antrozous pallidus*), southern sea otter (*Enhydra lutris nereis),* mountain lion - Southern California/Central Coast ESU (*Puma concolor),* American badger (*Taxidea taxus*), Crotch's bumble bee (*Bombus crotchii*), and western bumble bee (*Bombus occidentalis*), have a low potential to occur within the BSA and are not discussed further. Ohlone tiger beetle (*Cicindela ohlone*) is known to occur at the Moore Creek Preserve but has low potential to occur in the BSA due to the absence of habitat and is not discussed further. The 14 remaining species were either observed during the March 2025 field survey or determined to have a moderate to high potential to occur within the BSA based on the presence of suitable habitat and recorded observations (Table 5). Additional information is provided in Attachment E. The BSA falls within designated critical habitat for California red-legged frog (Moore Creek; 75FR12816 12959), tidewater goby (Moore Creek/Natural Bridges; 78 FR 8746 8819), coho salmon—Central California Coast ESU (San Lorenzo River, Branciforte Creek, and Carbonera Creek; 70 FR 52488), and steelhead—Central California Coast DPS (San Lorenzo River, Branciforte Creek, Carbonera Creek, and Arana Gulch; 70 FR 52488) and proposed critical habitat for monarch butterfly (Natural Bridges and Lighthouse Field; 89 FR 100662 100716) (USFWS 2025b; NOAA 2025).

Table 5. Special-Status Wildlife with Moderate to High Potential to Occur in BSA.

Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
Invertebrates							
Monarch butterfly[a] *Danaus plexippus plexippus*	FPT/None	Moore Creek Natural Bridges	Arroyo Seco	Branciforte Creek Ocean Villa Creek	—	—	Lighthouse Creek
Fish							
Pacific lamprey *Entosphenus tridentatus*	None/SSC	—	—	San Lorenzo River	—	—	—
tidewater goby *Eucyclogobius newberryi*	FE/SSC	Moore Creek Natural Bridges	—	San Lorenzo River	—	—	—
Monterey roach *Lavinia symmetricus subditus*	None/SSC	—	—	San Lorenzo River	—	—	—
coho salmon - central California coast ESU *Oncorhynchus kisutch* pop. 4	FE/SE	—	—	San Lorenzo River	—	—	—
steelhead - central California coast DPS *Oncorhynchus mykiss irideus* pop. 8	FT/SSC	—	—	San Lorenzo River Branciforte Creek Carbonera Creek	—	Arana Gulch	—

Table 5. Special-Status Wildlife with Moderate to High Potential to Occur in BSA.

Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
Amphibians and Reptiles							
Santa Cruz black salamander *Aneides flavopunctatus niger*	None/SSC	Moore Creek	—	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek	—	Arana Gulch	Jordan Gulch
California giant salamander *Dicamptodon ensatus*	None/SSC	Moore Creek Natural Bridges	—	Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek	—	Arana Gulch	—
California red-legged frog *Rana draytonii*	FT/SSC	Moore Creek Natural Bridges	—	—	—	—	Lomardi Gulch
northwestern pond turtle *Actinemys marmorata*	FPT/SSC	Moore Creek Natural Bridges	—	San Lorenzo River	Laurel Creek	—	—
Birds							
white-tailed kite *Elanus leucurus* (nesting)	None/FP	Moore Creek Natural Bridges	—	—	—	—	—

Table 5. Special-Status Wildlife with Moderate to High Potential to Occur in BSA.

Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
Nesting birds	N/A	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek Arroyo de San Pedro Regaldo Wagner Grove Pasatiempo Creek Jessie Street Marsh Ocean Villa Creek	Laurel Creek Bay Avenue Creek Chrystal Gulch Dodero Spring Creek Ojas de Agua Creek	Arana Gulch Hagemann Gulch Woods-Dog Leg Creek	Lombardi Creek Lighthouse Drainage Pilkington Creek Bethany Creek Jordan Gulch DeLaveaga Golf Course Pond
Mammals							
Townsend's big-eared bat *Corynorhinus townsendii*	None/SSC	Moore Creek	—	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek	—	Arana Gulch	Jordan Gulch
western red bat *Lasiurus frantzii*	None/SSC	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek Arroyo de San Pedro Regaldo	Laurel Creek	Arana Gulch	Jordan Gulch

Table 5. Special-Status Wildlife with Moderate to High Potential to Occur in BSA.

Species	Status* (Federal/State)	General Locations in BSA					
		Moore Creek Watershed	Arroyo Seco Watershed	San Lorenzo River Watershed	Neary Lagoon Watershed	Arana Gulch Watershed	Other Watercourses
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	None/SSC	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Pogonip Creek Redwood Creek Arroyo de San Pedro Regaldo	—	Arana Gulch Hagemann Gulch	Jordan Gulch
Common roosting bats	N/A	Moore Creek Natural Bridges	Arroyo Seco	San Lorenzo River Branciforte Creek Carbonera Creek Redwood Creek Pogonip Creek Arroyo de San Pedro Regaldo	Laurel Creek Neary Lagoon	Arana Gulch	Jordan Gulch
Invertebrates							

Note: Additional information in Attachment E, Special-Status Wildlife Species Potential to Occur.
[a] Not expected to occur in stream reach affected by routine maintenance activities but known to occur in nearby trees.
***Status**
FE: Federally Endangered
FT: Federally Threatened
FPT: Federally Proposed for Listing as Threatened
FP: Fully Protected Species
SE: State Endangered
ST: State Threatened
SC: State Candidate for Listing
SSC: Species of Special Concern
WL: CDFW Watch List Species, including federal and state status.

4.2 Nesting Birds

In California, all native birds and active bird nests (with eggs or young) are protected by Sections 3503 and 3503.5 of the California Fish and Game Code. The trees and shrubs within and adjacent to the BSA provide abundant nesting habitat for several native resident and migratory bird species.

4.3 Sensitive Natural Communities

Sensitive natural communities are vegetation communities that are of limited distribution statewide or within a county or region. A list of sensitive natural communities in California is maintained by CDFW (2025b) based on the rarity of, and potential threats to, these communities in California. Communities with a state rarity ranking of S1 through S3 in CDFW's Natural Community list (CDFW 2025b) are considered highly imperiled, and project impacts on high-quality occurrences of these communities are typically considered significant under CEQA. Sensitive natural communities often include riparian vegetation along rivers, streams, and lakes. As described in Section 3.1, there are nine vegetation communities in the BSA that are considered sensitive natural communities by CDFW (2025b): bigleaf maple forest and woodland, black cottonwood forest and woodland, redwood forest and woodland, Douglas fir – tanoak – madrone forest and woodland, California sycamore – coast live oak riparian woodland, box-elder forest and woodland, white alder groves, Goodding's willow – red willow riparian woodland and forest, and arroyo willow thickets.

4.4 Potentially Jurisdictional Aquatic Resources

There are 27 watercourses in the BSA. All 27 watercourses fall under the jurisdiction of USACE pursuant to Section 404 of the Clean Water Act, the San Francisco Bay RWQCB pursuant to Section 401 of the Clean Water Act or the California Porter-Cologne Act (Porter-Cologne), and CDFW under Section 1602 of the California Fish and Game Code. As noted above, these watercourses flow primarily into Monterey Bay. The drainages and entire lateral extent of the riparian canopy appear to meet the criteria to be considered waters of the United States and the state of California due to their physical, hydrologic, and biological characteristics. Riparian vegetation with these drainages falls under CDFW jurisdiction under Section 1602 of the California Fish and Game Code.

5 Summary of Site Constraints and Recommendations

The proposed project could potentially be constrained by the following biological resources present or potentially present in or immediately adjacent to the BSA.

5.1 Special-Status Plants

There are 10 special-status plants—Anderson's manzanita, robust spineflower, Santa Cruz tarplant, Kellogg's horkelia, harlequin lotus, elongate copper moss, Mt. Diablo cottonweed, Hickman's popcorn-flower, San Francisco popcorn-flower, and Santa Cruz clover—with a moderate to high potential to occur in the BSA (Section 4.1.1). Vegetation removal activities associated with project implementation could directly impact these species, if present, through physical damage or destruction. To protect special-status plant species, the City of Santa Cruz will comply with the Special-Status Species and Habitat Protection Measures outlined in Attachment F, Routine Maintenance Best

Management Practices, which contains measures adapted from the City's draft CDFW Streambed Alteration Agreement (EPIMS-SCR-46003-R3, Revision 1), the City's former Lake and Streambed Alteration Agreement (No. 1600-2013-0176-R3), the City's Final Operations and Maintenance Habitat Conservation Plan (HCP), the City-Wide Creeks and Wetlands Management Plan, the City's Initial Study/Mitigated Negative Declaration Anadromous Salmonid HCP (Dudek 2023), and San Lorenzo River and Lagoon Management Plan.

5.2 Special-Status Wildlife

There are 14 special-status wildlife species—monarch butterfly, Pacific lamprey, tidewater goby, Monterey roach, coho salmon, steelhead, Santa Cruz black salamander, California giant salamander, California red-legged frog, northwestern pond turtle, white-tailed kite, Townsend's big-eared bat, San Francisco dusky-footed woodrat, and western red bat—with a moderate or high potential to occur on or in the vicinity of the BSA (Section 4.1.2). These species or species groups are briefly discussed below.

Monarch Butterfly. The BSA provides suitable habitat for overwintering monarchs at or near Natural Bridges Creek, lower Moore Creek, Lighthouse Creek, Arroyo Seco, Branciforte Creek, and Ocean Villa Creek, and there are known overwintering sites at five of these (Natural Bridges, Moore Creek, Arroyo Seco, Ocean Villa Creek, and Lighthouse Field; Xerces Society 2025). Active work in the stream channels at these sites would not affect trees used by overwintering monarchs, and work would be completed before mid-November when stable monarch aggregations form and persist through January or into February (Western Monarch Milkweed Mapper 2025).

Pacific lamprey, Tidewater Goby, Monterey Roach, Coho Salmon, and Steelhead. The BSA provides suitable habitat for Pacific lamprey, tidewater goby, Monterey roach, Coho salmon, and steelhead within several of the flowing creeks, rivers, and marshes of the BSA. Active work in or over natural stream and drainage channels may cause changes in turbidity, sedimentation, or structure of the streambed and impact fish movement. To avoid potential impacts to special-status fish, the City will comply with the Special-Status Species and Habitat Protection Measures outlined in Attachment F.

Special-status Amphibians. The BSA provides suitable habitat for special-status amphibians, including Santa Cruz black salamander, California giant salamander, and California red-legged frog, within many of the creeks and rivers of the BSA. Frogs and salamanders may be killed or injured by removal of debris, sediment, logs, and vegetation, and by the movement of heavy machinery. Active work in or over natural stream and drainage channels may cause changes in turbidity, sedimentation, or structure of the streambed and impact amphibian reproduction. To avoid potential impacts to special-status amphibians, the City will comply with the Special-Status Species and Habitat Protection Measures outlined in Attachment F.

Northwestern Pond Turtle. The BSA provides suitable habitat for northwestern pond turtle within several of the flowing creeks, rivers, and marshes of the BSA. Debris, sediment, and vegetation removal activities that result in ground compaction and increases in human activity could contribute to impacts to this species, if present, during the nesting season (typically March – August). To avoid potential impacts to northwestern pond turtle, the City will comply with the Special-Status Species and Habitat Protection Measures in Attachment F.

White-Tailed Kite and Other Nesting and Migratory Birds. The BSA provides suitable nesting habitat for a variety of native bird species, including white-tailed kite. To avoid potential impacts to nesting and migratory birds, the City will comply with the Special-Status Species and Habitat Protection Measures outlined in Attachment F.

San Francisco Dusky-footed Woodrat. The BSA provides suitable habitat for San Francisco dusky-footed woodrat in the riparian corridors along many of the streams and rivers in the BSA. Vegetation removal and other routine maintenance activities could directly impact this species through destruction of nests and direct mortality by the operation of heavy machinery. To avoid potential impacts to San Francisco dusky-footed woodrat, the City will comply with the Special-Status Species and Habitat Protection Measures outlined in Attachment F.

Townsend's Big-Eared Bat, Western Red Bat, and Other Roosting Bats. The BSA provides suitable foraging and roosting habitat for Townsend's big-eared bat, western red bat, and other foliage-roosting and cavity-roosting bat species. If project activities require the removal of trees during peak activity timeframes when young or overwintering bats may be present (generally March through April and August through October), such activities could directly impact active bat roosts. To avoid potential impacts to active bat roosts, the City will comply with the Special-Status Species and Habitat Protection Measures outlined in Attachment F.

5.3 Sensitive Natural Communities

As mentioned above, there are nine vegetation communities in the BSA that are considered sensitive natural communities by CDFW (2025b): bigleaf maple forest and woodland, black cottonwood forest and woodland, redwood forest and woodland, Douglas fir – tanoak -- madrone forest and woodland, California sycamore -- coast live oak riparian woodland, box-elder forest and woodland, white alder groves, Goodding's willow -- red willow riparian woodland and forest, and arroyo willow thickets. Removal of mature live trees or dense thickets of native shrubby understory vegetation (e.g., California blackberry) from these communities would be considered potentially significant under CEQA. To avoid such impacts, the City will comply with the measures outlined in Attachment F.

5.4 Potentially Jurisdictional Aquatic Resources

As mentioned above, multiple drainages or streams within the BSA are jurisdictional aquatic resources that are subject to regulation by the USACE, RWQCB, and CDFW. Associated riparian vegetation communities are also subject to CDFW jurisdiction under Section 1602 of the California Fish and Game Code and RWQCB jurisdiction under the California Porter-Cologne Act. Since the project will not involve any fill of or discharges into the wetted portion of drainages and streams, a Section 404 Clean Water Act permit from USACE and associated Section 401 water quality certification from the San Francisco RWQCB are not needed. Since the project involves removal or trimming of riparian vegetation, the City is currently working with CDFW to renew its 5-year Routine Maintenance Agreement (RMA) for the project pursuant to California Fish and Game Code Section 1602.

Please contact Matt Ricketts or Tara Johnson-Kelly if you have any questions regarding the content of this report.

Sincerely,

Tara Johnson-Kelly
Biologist

Matt Ricketts
Senior Biologist

Att.: *Figure 1, Routine Maintenance Project Locations*
Attachment A, Representative Site Photographs
Attachment B, Plant Species Compendium
Attachment C, Wildlife Species Compendium
Attachment D, Special-Status Plant Species Potential to Occur
Attachment E, Special-Status Wildlife Species Potential to Occur
Attachment F, Routine Maintenance Project Best Management Practices
cc: *Stephanie Strelow, Dudek*

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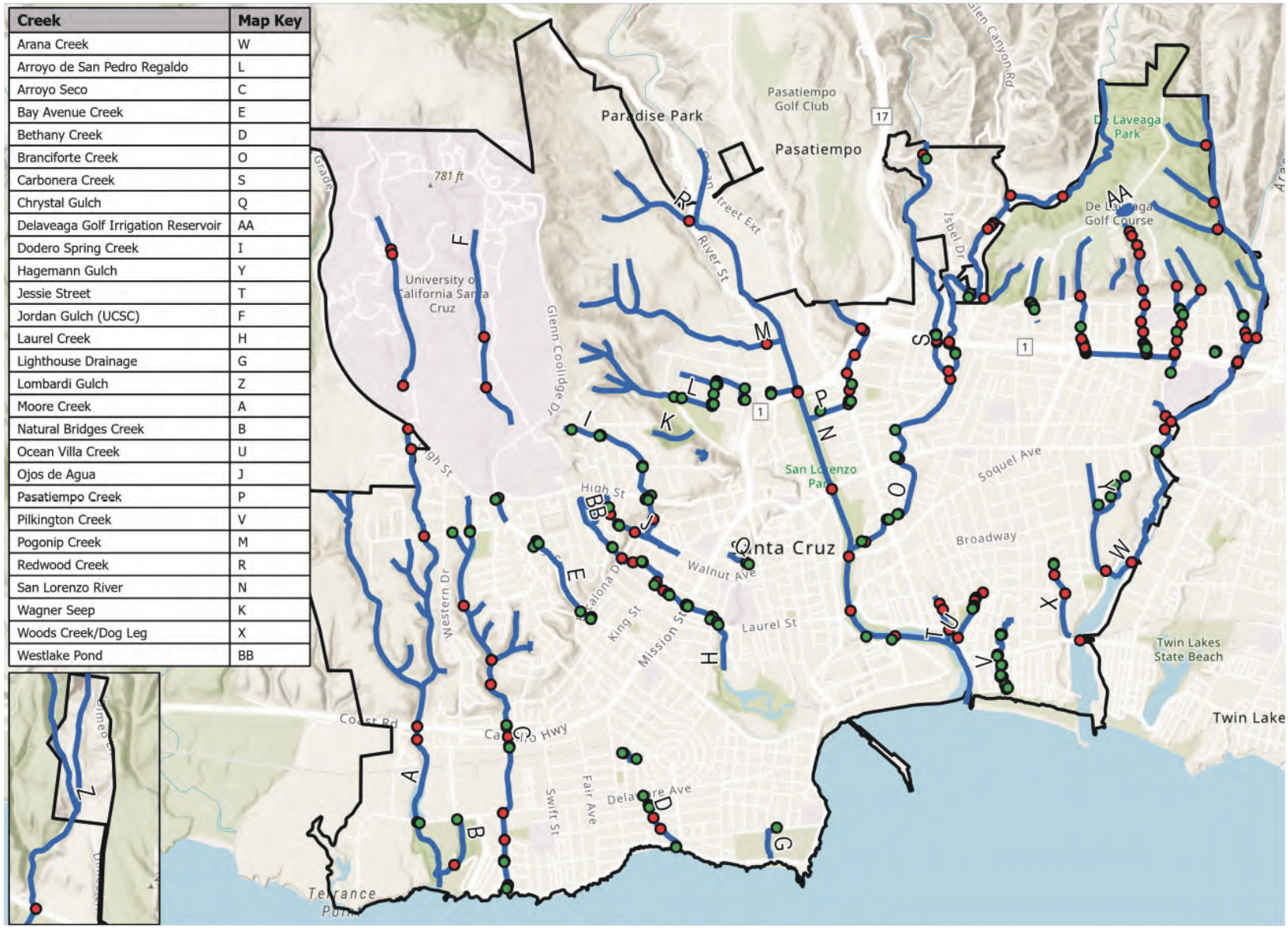
Creek	Map Key
Arana Creek	W
Arroyo de San Pedro Regaldo	L
Arroyo Seco	C
Bay Avenue Creek	E
Bethany Creek	D
Branciforte Creek	O
Carbonera Creek	S
Chrystal Gulch	Q
Delaveaga Golf Irrigation Reservoir	AA
Dodero Spring Creek	I
Hagemann Gulch	Y
Jessie Street	T
Jordan Gulch (UCSC)	F
Laurel Creek	H
Lighthouse Drainage	G
Lombardi Gulch	Z
Moore Creek	A
Natural Bridges Creek	B
Ocean Villa Creek	U
Ojos de Agua	J
Pasatiempo Creek	P
Pilkington Creek	V
Pogonip Creek	M
Redwood Creek	R
San Lorenzo River	N
Wagner Seep	K
Woods Creek/Dog Leg	X
Westlake Pond	BB



SOURCE: City of Santa Cruz

FIGURE 1

Routine Maintenance Project Locations

City of Santa Cruz Routine Maintenance Project

DUDEK

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Attachment A

Representative Site Photographs

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Photo 1: View of San Francisco dusky-footed woodrat nest at Moore Creek.

Photo 2: View of red-eared sliders at Westlake Pond.

Photo 3. View of Westlake Pond, facing south southeast.

Photo 4. View of Westlake Pond, facing east southeast.

Photo 5: View of Neary Lagoon, facing east southeast.

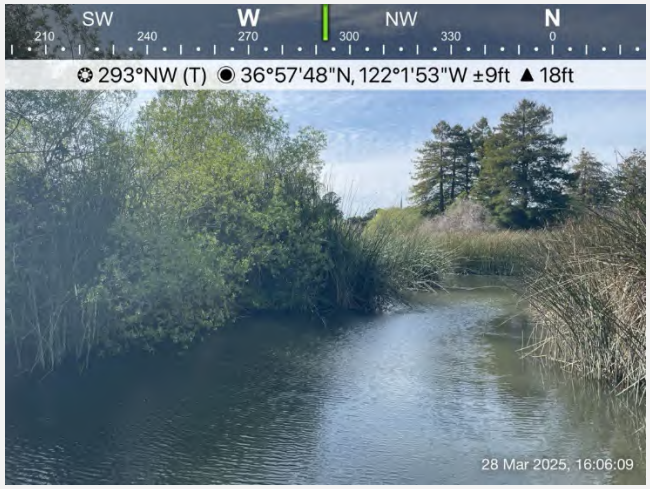

Photo 6: View of Neary Lagoon, facing west northwest.

Photo 7: View of San Lorenzo River, facing north.

Photo 8: View of San Lorenzo River, facing southeast.

Photo 9: View of Branciforte Creek, facing west southwest.

Photo 10: View of Branciforte Creek, facing north northwest.

Photo 11: View of Arana Gulch, facing southwest.

Photo 12: View of Arana Gulch, facing north.

Attachment B

Plant Species Compendium

Plant Species

Eudicots

ANACARDIACEAE – SUMAC OR CASHEW FAMILY

Toxicodendron diversilobum – poison oak

APIACEAE – CARROT FAMILY

* *Conium maculatum* – poison hemlock

Oenanthe sarmentosa – water-parsley

ASTERACEAE – SUNFLOWER FAMILY

Baccharis pilularis – coyote brush

BETULACEAE – BIRCH FAMILY

Alnus rhombifolia – white alder

FAGACEAE – OAK FAMILY

Quercus agrifolia – coast live oak

FRANKENIACEAE – FRANKENIA FAMILY

Frankenia salina – alkali heath

LAURACEAE – LAUREL FAMILY

Umbellularia californica – California bay

MYRICACEAE – WAX MYRTLE FAMILY

Morella californica – wax myrtle

MYRTACEAE – MYRTLE FAMILY

* *Eucalyptus globulus* – Tasmanian bluegum

POLYGONACEAE – BUCKWHEAT FAMILY

Rumex occidentalis – western dock

RHAMNACEAE – BUCKTHORN FAMILY

Frangula californica – California coffee berry

ROSACEAE – ROSE FAMILY

Rubus ursinus – California blackberry

SALICACEAE – WILLOW FAMILY

Populus fremontii – Fremont cottonwood

Salix lasiandra – shining willow

Salix lasiolepis – arroyo willow

URTICACEAE – NETTLE FAMILY

Urtica dioica – stinging nettle

Ferns and Fern Allies

EQUISETACEAE – HORSETAIL FAMILY

Equisetum telmateia – giant horsetail

Gymnosperms and Gnetophytes

CUPRESSACEAE – CYPRESS FAMILY

Sequoia sempervirens – redwood

PINACEAE – PINE FAMILY

Pinus attenuata – knobcone pine

Monocots

CYPERACEAE – SEDGE FAMILY

Schoenoplectus americanus – American bulrush

Schoenoplectus californicus – California bulrush

POACEAE – GRASS FAMILY

Distichlis spicata – salt grass

* signifies introduced (non-native) species

Attachment C

Wildlife Species Compendium

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Wildlife Species

Reptiles

IGUANIDAE – IGUANID LIZARDS

Sceloporus occidentalis – western fence lizard

EMYDIDAE – TURTLES AND TORTOISES

* *Trachemys scripta elegans* – red-eared slider

Birds

ICTERIDAE – BLACKBIRDS

* *Molothrus ater* – brown-headed cowbird

FRINGILLIDAE – FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Haemorhous mexicanus – house finch

Haemorhous purpureus – purple finch

Spinus psaltria – lesser goldfinch

TYRANNIDAE – TYRANT FLYCATCHERS

Sayornis nigricans – black phoebe

ACCIPITRIDAE – HAWKS, KITES, EAGLES, AND ALLIES

Accipiter cooperii – Cooper's hawk

Buteo jamaicensis – red-tailed hawk

Buteo lineatus – red-shouldered hawk

PANDIONIDAE – OSPREYS

Pandion haliaetus – osprey

TROCHILIDAE – HUMMINGBIRDS

Calypte anna – Anna's hummingbird

CORVIDAE – CROWS AND JAYS

Corvus brachyrhynchos – American crow

REGULIDAE – KINGLETS

Corthylio calendula – ruby-crowned kinglet

MIMIDAE – MOCKINGBIRDS AND THRASHERS

Toxostoma redivivum – California thrasher

SITTIDAE – NUTHATCHES

Sitta carolinensis – white-breasted nuthatch

COLUMBIDAE – PIGEONS AND DOVES

Zenaida macroura – mourning dove

RALLIDAE – RAILS, GALLINULES, AND COOTS

Fulica americana – American coot

PARIDAE – CHICKADEES AND TITMICE

Baeolophus inornatus – oak titmouse

Poecile rufescens – chestnut-backed chickadee

VIREONIDAE – VIREOS

Vireo huttoni – Hutton's vireo

ANATIDAE – DUCKS, GEESE, AND SWANS

Anas platyrhynchos – mallard

Branta canadensis – Canada goose

BOMBYCILLIDAE – WAXWINGS

Bombycilla cedrorum – cedar waxwing

PARULIDAE – WOOD-WARBLERS

Setophaga coronata – yellow-rumped warbler

PICIDAE – WOODPECKERS AND ALLIES

Dryobates villosus – hairy woodpecker

TROGLODYTIDAE – WRENS

Thryomanes bewickii – Bewick's wren

PASSERELLIDAE – NEW WORLD SPARROWS

Junco hyemalis – dark-eyed junco

Melospiza melodia – song sparrow

SYLVIIDAE – SYLVIID WARBLERS

Chamaea fasciata – wrentit

Mammals

CRICETIDAE – RATS, MICE, AND VOLES

Neotoma fuscipes annectens – San Francisco dusky-footed woodrat

* Signifies introduced (non-native species)

Attachment D

Special-Status Plant Species Potential to Occur

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Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Agrostis blasdalei	Blasdale's bent grass	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal prairie/perennial rhizomatous herb/ May–July/0–490	**Not expected to occur**. No suitable vegetation present. There are no CNDDB or Calflora records of this species in the BSA.
Amsinckia lunaris	bent-flowered fiddleneck	None/None/1B.2	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland/annual herb/Mar–June/10–1,640	**Not expected to occur.** There are no CNDDB or Calflora records of this species in the BSA.
Anomobryum julaceum	slender silver moss	None/None/4.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; Roadsides (usually)/moss/N.A./ 330–3,280	**Not expected to occur.** There are no CNDDB or Calflora records of this species in the BSA.
Aphyllon robbinsii	Robbins' broomrape	None/None/1B.1	Coastal bluff scrub; Rocky, Sandy/annual herb (achlorophyllous)/Apr–July/0–330	**Not expected to occur.** There are no CNDDB or Calflora records of this species in the BSA and suitable habitat is absent.
Arabis blepharophylla	coast rockcress	None/None/4.3	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; Rocky/perennial herb/Feb–May/10–3,610	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Arctostaphylos andersonii	Anderson's manzanita	None/None/1B.2	Broadleafed upland forest, Chaparral, North Coast coniferous forest; Edges, Openings/perennial evergreen shrub/ Nov–May/195–2,495	**Moderate potential to occur.** There are records just outside the BSA on UCSC campus near Moore Creek (CDFW 2025a; Occ. No. 25).
Arctostaphylos glutinosa	Schreiber's manzanita	None/None/1B.2	Chaparral, Closed-cone coniferous forest/perennial evergreen shrub/Mar–Apr (Nov)/560–2,245	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Arctostaphylos ohloneana	Ohlone manzanita	None/None/1B.1	Closed-cone coniferous forest, Coastal scrub/evergreen shrub/Feb–Mar/ 1,475–1,740	**Not expected to occur.** The site is outside of the species' known elevation range.
Arctostaphylos silvicola	Bonny Doon manzanita	None/None/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest/perennial evergreen shrub/Jan–Mar/395–1,970	**Not expected to occur.** There are no CNDDB records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Arenaria paludicola	marsh sandwort	FE/SE/1B.1	Marshes and swamps (brackish, freshwater); Openings, Sandy/perennial stoloniferous herb/May–Aug/10–560	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Astragalus agnicidus	Humboldt County milk-vetch	None/SE/1B.1	Broadleafed upland forest, North Coast coniferous forest; Disturbed areas, Openings, Roadsides (sometimes)/perennial herb/(Mar)Apr–Sep/395–2,625	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Azolla microphylla	Mexican mosquito fern	None/None/4.2	Marshes and swamps (ponds, slow water)/annual/perennial herb/Aug/ 100–330	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Calandrinia breweri	Brewer's calandrinia	None/None/4.2	Chaparral, Coastal scrub; Burned areas, Disturbed areas, Loam (sometimes), Sandy (sometimes)/annual herb/(Jan)Mar–June/35–4,005	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Calochortus uniflorus	pink star-tulip	None/None/4.2	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest/perennial bulbiferous herb/ Apr–June/35–3,510	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Calyptridium parryi var. *hesseae*	Santa Cruz Mountains pussypaws	None/None/1B.1	Chaparral, Cismontane woodland; Gravelly (sometimes), Openings, Sandy (sometimes)/annual herb/May–Aug/ 1,000–5,020	**Not expected to occur.** The site is outside of the species' known elevation range.
Carex comosa	bristly sedge	None/None/2B.1	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland/perennial rhizomatous herb/ May–Sep/0–2,050	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Carex saliniformis	deceiving sedge	None/None/1B.2	Coastal prairie, Coastal scrub, Marshes and swamps (coastal salt), Meadows and seeps; Mesic/perennial rhizomatous herb/(May)June (July)/10–755	**Low potential to occur.** There are no records of this species within the BSA, but there are records just outside the BSA on UCSC campus (CDFW 2025a; Occ. No. 16).
Castilleja ambigua var. *ambigua*	johnny-nip	None/None/4.2	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and	**Low potential to occur.** The BSA does not support suitable

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			foothill grassland, Vernal pools (margins)/annual herb (hemiparasitic)/ Mar–Aug/0–1,425	habitat for this species, but there is one Calflora observation of this species near Moore Creek from 1990 (Calflora 2025; UCSC100005187)
Chorizanthe pungens var. *hartwegiana*	Ben Lomond spineflower	FE/None/1B.1	Lower montane coniferous forest (maritime ponderosa pine sandhills)/annual herb/Apr–July/295–2,000	**Low potential to occur.** The BSA contains suitable habitat for this species. There are no CNDDB records of this species in the BSA, but there is one Calflora record of this species just north of the BSA near the Mystery Spot (Calflora 2025, UCSC100004985).
Chorizanthe pungens var. *pungens*	Monterey spineflower	FT/None/1B.2	Chaparral (maritime), Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland; Sandy/annual herb/ Apr–June (July–Aug)/10–1,475	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Chorizanthe robusta var. *hartwegii*	Scotts Valley spineflower	FE/None/1B.1	Meadows and seeps (sandy), Valley and foothill grassland (mudstone, Purisima outcrops)/annual herb/Apr–July/755–805	**Not expected to occur.** The site is outside of the species' known elevation range.
Chorizanthe robusta var. *robusta*	robust spineflower	FE/None/1B.1	Chaparral (maritime), Cismontane woodland (openings), Coastal dunes, Coastal scrub; Gravelly (sometimes), Sandy (sometimes)/annual herb/Apr–Sep/10–985	**Moderate potential to occur.** There are several CNDDB records throughout the BSA near Pogonip Creek, Branciforte Creek, and Arana Gulch (CDFW 2025a; Occ. No. 5, 7, and 34).
Collinsia multicolor	San Francisco collinsia	None/None/1B.2	Closed-cone coniferous forest, Coastal scrub; Serpentine (sometimes)/annual herb/(Feb)Mar–May/100–900	**Not expected to occur.** There are no CNDDB records in the BSA.
Cypripedium fasciculatum	clustered lady's-slipper	None/None/4.2	Lower montane coniferous forest, North Coast coniferous forest; Seeps (usually), Serpentine (usually), Streambanks/perennial rhizomatous herb/Mar–Aug/330–7,990	**Not expected to occur.** No suitable vegetation present. There are no Calflora observations of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Cypripedium montanum	mountain lady's-slipper	None/None/4.2	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest/perennial rhizomatous herb/Mar–Aug/605–7,300	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Dacryophyllum falcifolium	tear drop moss	None/None/1B.3	North Coast coniferous forest; Carbonate/moss/N.A./165–900	**Low potential to occur.** There are no records of this species in the BSA, but there is 1 Calflora record from Cave Gulch near UCSC campus (Calflora 2025; 448458).
Eastwoodiella californica	swamp harebell	None/None/1B.2	Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps (freshwater), Meadows and seeps, North Coast coniferous forest; Mesic/perennial rhizomatous herb/June–Oct/5–1,330	**Not expected to occur.** There are no records of this species in the BSA.
Elymus californicus	California bottle-brush grass	None/None/4.3	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest, Riparian woodland/perennial herb/May–Aug (Nov)/50–1,540	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Eriogonum nudum var. *decurrens*	Ben Lomond buckwheat	None/None/1B.1	Chaparral, Cismontane woodland, Lower montane coniferous forest (maritime ponderosa pine sandhills); Sandy/perennial herb/June–Oct/165–2,625	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Erysimum franciscanum	San Francisco wallflower	None/None/4.2	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland; Granitic (often), Roadsides (sometimes), Serpentine (often)/perennial herb/Mar–June/0–1,805	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Erysimum teretifolium	Santa Cruz wallflower	FE/SE/1B.1	Chaparral, Lower montane coniferous forest/perennial herb/Mar–July/395–2,000	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Eschscholzia hypecoides	San Benito poppy	None/None/4.3	Chaparral, Cismontane woodland, Valley and foothill grassland; Clay, Serpentine/annual herb/Mar–June/655–4,920	**Not expected to occur.** The BSA is outside of the species' known elevation range.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Fissidens pauperculus	minute pocket moss	None/None/1B.2	North Coast coniferous forest (damp coastal soil)/moss/N.A./35–3,360	**Not expected to occur.** No suitable vegetation present.
Gilia tenuiflora ssp. *arenaria*	Monterey gilia	FE/ST/1B.2	Chaparral (maritime), Cismontane woodland, Coastal dunes, Coastal scrub; Openings, Sandy/annual herb/Apr–June/0–150	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Hesperocyparis abramsiana var. *abramsiana*	Santa Cruz cypress	FT/SE/1B.2	Chaparral, Closed-cone coniferous forest, Lower montane coniferous forest; Granitic (sometimes), Sandstone (sometimes)/perennial evergreen tree/N.A./920–2,625	**Not expected to occur.** The BSA is outside of the species' known elevation range.
Hoita strobilina	Loma Prieta hoita	None/None/1B.1	Chaparral, Cismontane woodland, Riparian woodland; Mesic, Serpentine (usually)/perennial herb/May–July (Aug–Oct)/100–2,820	**Not expected to occur.** There are no CNDDB records in the BSA.
Holocarpha macradenia	Santa Cruz tarplant	FT/SE/1B.1	Coastal prairie, Coastal scrub, Valley and foothill grassland; Clay (often), Sandy/annual herb/June–Oct/35–720	**Moderate potential to occur.** There is one Calflora record in the BSA along Arana Gulch (Calflora 2025; wb2209-2867). There are a few historic CNDDB records of this species in the BSA (CDFW 2025a; Occ. No. 6 & 47).
Horkelia cuneata var. *sericea*	Kellogg's horkelia	None/None/1B.1	Chaparral (maritime), Closed-cone coniferous forest, Coastal dunes, Coastal scrub; Gravelly (sometimes), Openings, Sandy (sometimes)/perennial herb/Apr–Sep/ 35–655	**Moderate potential to occur.** There is one CNDDB record of this species near Moore Creek (CDFW 2025a; Occ. No. 57).
Horkelia marinensis	Point Reyes horkelia	None/None/1B.2	Coastal dunes, Coastal prairie, Coastal scrub; Sandy/perennial herb/May–Sep/ 15–2,475	**Low potential to occur.** Suitable habitat is absent from the BSA. There is one historic CNDDB record of this species near Moore Creek (CDFW 2025a; Occ. No. 29).

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Hosackia gracilis	harlequin lotus	None/None/4.2	Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland; Roadsides/perennial rhizomatous herb/Mar–July/0–2,295	**Moderate potential to occur.** Suitable habitat is present in the BSA. There are two Calflora records of this species along Empire Grade near Moore Creek (Calflora 2025; UCSC100001402 & UCSC100001405).
Iris longipetala	coast iris	None/None/4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps; Mesic/perennial rhizomatous herb/Mar–May(June)/0–1,970	**Not expected to occur.** No suitable vegetation present. There are no Calflora observations of this species in the BSA.
Lasthenia californica ssp. *macrantha*	perennial goldfields	None/None/1B.2	Coastal bluff scrub, Coastal dunes, Coastal scrub/perennial herb/Jan–Nov/15–1,705	**Not expected to occur.** There are no records of this species in the BSA.
Leptosiphon aureus	bristly leptosiphon	None/None/4.2	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland/annual herb/Apr–July/180–4,920	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Leptosiphon grandiflorus	large-flowered leptosiphon	None/None/4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland; Sandy (usually)/annual herb/Apr–Aug/15–4,005	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Malacothamnus arcuatus var. *arcuatus*	arcuate bushmallow	None/None/1B.2	Chaparral, Cismontane woodland/perennial deciduous shrub/Apr–Sep/50–1,165	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Micropus amphibolus	Mt. Diablo cottonweed	None/None/3.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; Rocky/annual herb/ Mar–May/150–2,705	**Moderate potential to occur.** There is 1 Calflora record near the BSA along Lombardi Gulch (Calflora 2025; xr166602).
Microseris paludosa	marsh microseris	None/None/1B.2	Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley and	**Not expected to occur.** There are no CNDDB records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
			foothill grassland/perennial herb/ Apr–June (July)/15–1,165	
Mielichhoferia elongata	elongate copper moss	None/None/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest; Acidic (usually), Carbonate (sometimes), Metamorphic, Roadsides (often), Vernally Mesic (usually)/moss/N.A./0–6,430	**High potential to occur.** There is one recent Calflora record of this species at Natural Bridges State Beach (Calflora 2025; SJSUC19216).
Mimulus rattanii ssp. *decurtatus*	Santa Cruz County monkeyflower	None/None/4.2	Chaparral, Lower montane coniferous forest; Gravelly, Lake Margins/annual herb/ May–July/1,310–1,640	**Not expected to occur.** The site is outside of the species' known elevation range. There are no Calflora records of this species in the BSA.
Monardella sinuata ssp. *nigrescens*	northern curly-leaved monardella	None/None/1B.2	Chaparral (SCR Co.), Coastal dunes, Coastal scrub, Lower montane coniferous forest (SCR Co., ponderosa pine sandhills); Sandy/annual herb/(Apr)May–July (Aug–Sep)/0–985	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Monolopia gracilens	woodland woollythreads	None/None/1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland; Serpentine/annual herb/(Feb)Mar–July/330–3,935	**Not expected to occur.** There is one historic CNDDB record mapped generally to Santa Cruz (CDFW 2025a; Occ. No. 10).
Pedicularis dudleyi	Dudley's lousewort	None/SR/1B.2	Chaparral (maritime), Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland/perennial herb/ Apr–June/195–2,955	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Penstemon rattanii var. *kleei*	Santa Cruz Mountains beardtongue	None/None/1B.2	Chaparral, Lower montane coniferous forest, North Coast coniferous forest/perennial herb/(Mar)May–June/1,310–3,610	**Not expected to occur.** The site is outside of the species' known elevation range.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Pentachaeta bellidiflora	white-rayed pentachaeta	FE/SE/1B.1	Cismontane woodland, Valley and foothill grassland (often serpentinite)/annual herb/Mar–May/115–2,035	**Not expected to occur.** There is one historic CNDDB occurrence mapped generally to Santa Cruz (CDFW 2025a; Occ. No. 11).
Perideridia gairdneri ssp. *gairdneri*	Gairdner's yampah	None/None/4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools; Vernally Mesic/perennial herb/June–Oct/0–2,000	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Pinus radiata	Monterey pine	None/None/1B.1	Cismontane woodland, Closed-cone coniferous forest/perennial evergreen tree/N.A./80–605	**Not expected to occur.** There are no CNDDB records of this species naturally occurring in the BSA. Species is widely planted as an ornamental or wind break outside of its natural range.
Piperia candida	white-flowered rein orchid	None/None/1B.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest; Serpentine (sometimes)/perennial herb/(Mar–Apr) May–Sep/100–4,300	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Piperia michaelii	Michael's rein orchid	None/None/4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest/perennial herb/Apr–Aug/10–3,000	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Plagiobothrys chorisianus var. *chorisianus*	Choris' popcornflower	None/None/1B.2	Chaparral, Coastal prairie, Coastal scrub; Mesic/annual herb/Mar–June/10–525	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Plagiobothrys chorisianus var. *hickmanii*	Hickman's popcornflower	None/None/4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Vernal pools/annual herb/Apr–June/50–1,280	**Moderate potential to occur.** Suitable habitat is present in the BSA and there is one recent Calflora record of this species mapped broadly in the Graham Hill Road vicinity (Calflora 2025; mg214340).

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Plagiobothrys diffusus	San Francisco popcornflower	None/SE/1B.1	Coastal prairie, Valley and foothill grassland/annual herb/Mar–June/ 195–1,180	**Moderate potential to occur.** Suitable habitat is present and there are several historic CNDDB records of this species along Moore Creek (CDFW 2025a; Occ. No. 8 & 9).
Polygonum hickmanii	Scotts Valley polygonum	FE/SE/1B.1	Valley and foothill grassland (mudstone, sandstone)/annual herb/May–Aug/ 690–820	**Not expected to occur.** The site is outside of the species' known elevation range.
Ranunculus lobbii	Lobb's aquatic buttercup	None/None/4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; Mesic/annual herb (aquatic)/Feb–May/50–1,540	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Sanicula hoffmannii	Hoffmann's sanicle	None/None/4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest; Clay (often), Serpentine (often)/perennial herb/Mar–May/100–985	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Senecio aphanactis	chaparral ragwort	None/None/2B.2	Chaparral, Cismontane woodland, Coastal scrub; Alkaline (sometimes)/annual herb/Jan–Apr (May)/50–2,625	**Not expected to occur.** There are no CNDDB records of this species in the BSA.
Sidalcea malachroides	maple-leaved checkerbloom	None/None/4.2	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland; Disturbed areas (often)/perennial herb/(Mar)Apr–Aug/0–2,395	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Stebbinsoseris decipiens	Santa Cruz microseris	None/None/1B.2	Broadleafed upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland; Openings, Serpentine (sometimes)/annual herb/Apr–May/35–1,640	**Not expected to occur.** There are no CNDDB records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State/CRPR)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur
Toxicoscordion fontanum	marsh zigadenus	None/None/4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps; Serpentine (often), Vernally Mesic/perennial bulbiferous herb/Apr–July/50–3,280	**Not expected to occur.** There are no Calflora records of this species in the BSA.
Trifolium buckwestiorum	Santa Cruz clover	None/None/1B.1	Broadleafed upland forest, Cismontane woodland, Coastal prairie; Gravelly/annual herb/Apr–Oct/115–2,000	**Moderate potential to occur.** Suitable habitat is present in the BSA and there is one CNDDB record of this species near the BSA in Paradise Park (CDFW 2025a; Occ. No. 5).
Trifolium polyodon	Pacific Grove clover	None/SR/1B.1	Closed-cone coniferous forest, Coastal prairie, Meadows and seeps, Valley and foothill grassland; Granitic (sometimes), Mesic/annual herb/Apr–June (July)/ 15–1,395	**Not expected to occur.** There are no CNDDB records of this species in the BSA.

***Status Legend:**
FE: Federally listed as endangered
FT: Federally listed as threatened
FC: Federal Candidate for listing
SE: State listed as endangered
ST: State listed as threatened
SC: State Candidate for listing
SR: State Rare
CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California but more common elsewhere
CRPR 3: Review List: Plants about which more information is needed
CRPR 4: Watch List: Plants of limited distribution
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

References:

CDFW (California Department of Fish and Wildlife). 2025a. California Natural Diversity Database (CNDDB) Rarefind. CDFW, Biogeographic Data Branch. Accessed March 2025. https://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp.

CalFlora. 2025. Observation Search, Santa Cruz County. Accessed March 2025. https://www.calflora.org/

Attachment E

Special-Status Wildlife Species Potential to Occur

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Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
Invertebrates				
Bombus crotchii	Crotch's bumble bee	None/SCE	Open grassland and scrub communities supporting suitable floral resources.	**Low potential to occur.** The BSA is adjacent to suitable habitat. There are no CNDDB or Bumble Bee Watch observations in the BSA.
Bombus occidentalis	western bumble bee	None/SCE	Once common and widespread, species has declined precipitously from central California to southern British Columbia, perhaps from disease	**Low potential to occur.** There are several historic observations of this species near Moore Creek and the San Lorenzo River (CDFW 2025a; Occ. No. 301, 266 & 309), but no recent occurrences. There are no Bumble Bee Watch observations of this species in the BSA.
Cicindela ohlone	Ohlone tiger beetle	FE/None	Remnant native grasslands with California oatgrass (Danthonia californica) and purple needlegrass (Stipa pulchra) in Santa Cruz County	**Low potential to occur**. The BSA does not contain suitable habitat for this species. While there are several CNDDB records in grasslands near Moore Creek and Pogonip (CDFW 2025a; Occ. No. 1, 2 & 3), the species is restricted to relatively level ground in native grasslands with patches of bare Watsonville loam soils (Land Trust of Santa Cruz County 2023). The Moore Creek drainage does not contain these microhabitat characteristics; therefore, Project activities are unlikely to adversely impact the species or its habitat.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
Euphilotes enoptes smithi	Smith's blue butterfly	FE/None	Sand dunes, scrub, chaparral, grassland, and their ecotones	**Not expected to occur.** The BSA does not contain suitable habitat for this species and there are no CNDDB records of this species within the BSA.
Polyphylla barbata	Mount Hermon (=barbate) June beetle	FE/None	Known only from sand hills in vicinity of Mount Hermon, Santa Cruz County	**Not expected to occur.** The BSA does not contain suitable habitat for this species. There is only one historic CNDDB record within the BSA, located near Paradise Park (CDFW 2025a; Occ. No. 12).
Trimerotropis infantilis	Zayante band-winged grasshopper	FE/None	Isolated sandstone deposits in the Santa Cruz Mountains (the Zayante Sand Hills ecosystem)	**Not expected to occur.** The BSA does not contain suitable habitat for this species. The only recent CNDDB record is located outside of the BSA near Mount Hermon (CDFW 2025a; Occ No. 3)
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	FC/None	Wind-protected tree groves with nectar sources and nearby water sources	**Moderate potential to occur.** The BSA contains suitable overwintering habitat. There are several confirmed overwintering sites throughout the BSA, including Natural Bridges, Moore Creek, Arroyo Seco, Ocean Villa Creek, and Lighthouse Field (Xerces Society 2025).
Fish				
Entosphenus tridentatus	Pacific lamprey	None/SSC	Freshwater habitat includes lakes, rivers, and creeks; soft substrates in shallow areas along banks.	**High potential to occur.** The BSA contains suitable stream habitat for this species and project activities could

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
				adversely affect the species or its habitat.
Eucyclogobius newberryi	tidewater goby	FE/SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County, to the mouth of the Smith River	**High potential to occur.** The BSA contains suitable habitat for this species. There are several CNDDB records of this species at the mouth of Moore Creek/Natural Bridges and in lower San Lorenzo River (CDFW 2025a; Occ. No. 30 & 113).
Lavinia symmetricus subditus	Monterey roach	None/SSC	Tributaries to Monterey Bay, specifically the Salinas, Pajaro, & San Lorenzo drainages. Generally found in small, intermittent streams, where dense populations are often observed in isolated pools.	**High potential to occur.** The BSA contains suitable stream habitat for this species and project activities could adversely affect the species or its habitat. There are several CNDDB records of this species in the San Lorenzo River (CDFW 2025a).
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	FE/SE	Streams and small freshwater tributaries during first half of life cycle and estuarine and marine waters of the Pacific Ocean during the second half of life cycle. Spawns in small streams with stable gravel substrates.	**High potential to occur.** The BSA contains suitable habitat for this species. There is a CNDDB record of this species in the San Lorenzo River (CDFW 2025a; Occ. No. 4).
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	FT/SSC	Coastal basins from Redwood Creek south to the Gualala River, inclusive; does not include summer-run steelhead	**High potential to occur.** The BSA contains suitable habitat for this species. There are CNDDB records of this species in the San Lorenzo River, Pasatiempo Creek, and Arana Gulch (CDFW 2025; Occ. No. 20, 5 & 15). San Lorenzo River,

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
				Branciforte Creek, Carbonera Creek, and Arana Gulch Creek are mapped as steelhead streams by County of Santa Cruz (County of Santa Cruz, 2025).
Thaleichthys pacificus	eulachon	FT/SSC	Found in Klamath River, Mad River, and Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries	**Not expected to occur.** The BSA is outside the known range of the species.
Amphibians				
Ambystoma macrodactylum croceum	Santa Cruz long-toed salamander	FE/FP, SE	Dense riparian vegetation, thick coastal scrub, and oak woodland	**Not expected to occur.** The BSA is outside the known range of the species (California Herps 2025)
Aneides niger	Santa Cruz black salamander	None/SSC	Restricted to mesic forests in the fog belt of the outer Coast Range of San Mateo, Santa Cruz, and Santa Clara counties. Mixed deciduous and coniferous woodlands and coastal grasslands. Occurs in moist streamside microhabitats and is found under rocks, talus, and damp woody debris.	**High potential to occur.** The BSA contains suitable aquatic and upland habitats for this species. There are four CNDDB records of this species in the BSA, the most recent from Jordan Gulch in 2015 (CDFW 2024a; Occ. No. 77).
Dicamptodon ensatus	California giant salamander	None/SSC	Known from wet coastal forests and chaparral near streams and seeps from Mendocino Co. south to Monterey Co. and east to Napa Co. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**High potential to occur.** The BSA contains suitable aquatic and upland habitats for this species. There is one CNDDB record in the BSA (CDFW 2025a; Occ. No. 165).
Rana boylii pop. 4	foothill yellow-legged frog - central coast DPS	FT/SE	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Low potential to occur.** The BSA contains suitable aquatic habitat for this species. There are several historic CNDDB

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
				records of this species within the BSA, but the most recent occurrence is approx. 1 mile east of the BSA in Soquel Creek (CDFW 2025a; Occ. No. 102). There are no records of this species in the BSA (G. Kittleson, personal communication, March 27, 2025).
Rana draytonii	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	**High potential to occur.** The BSA contains suitable aquatic and upland habitats for this species. There are several CNDDB records of the species in the western part of the BSA in Lombardi Gulch (CDFW 2025a; Occ. No. 621 & 323), and Moore Creek and Natural Bridges (CDFW 2025a; Occ. No. 549 and 203). This species is not known to occur east of Moore Creek in the BSA (G. Kittleson, personal communication, March 27, 2025)
Reptiles				
Thamnophis sirtalis tetrataenia	San Francisco garter snake	FE/FP, SE	Wide range of habitats including grasslands or wetlands adjacent to ponds, marshes, and sloughs	**Not expected to occur.** The BSA contains suitable habitat for this species, but the BSA is outside its known range.
Actinemys marmorata	northwestern pond turtle	FPT/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**High potential to occur.** The BSA contains suitable aquatic and upland habitat for this species. There are several

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
				CNDDB records of this species in westside Santa Cruz, including Moore Creek, Natural Bridges, Laurel Creek, Westlake Pond, and Neary Lagoon (CDFW 2025a; Occ. No. 1080, 502, 1147 & 1148). This species is known to occupy Westlake Pond at the headwater and Neary Lagoon at the outfall (G. Kittleson, personal communication, March 27, 2025).
Birds				
Agelaius tricolor (nesting colony)	tricolored blackbird	None/SSC, ST	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberrry; forages in grasslands, woodland, and agriculture	**Low potential to occur.** The BSA contains suitable breeding habitat for this species. There are two modern CNDDB records of this species in the BSA, one at Moore Creek and another at Neary Lagoon in 2014 (CDFW 2025a; Occ. No. 165 & 166). However, local experts report the species has been extirpated from the region for the past 20 years (G. Kittleson, personal communication, March 27, 2025).
Aquila chrysaetos (nesting and wintering)	golden eagle	None/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	**Low potential to occur.** The BSA contains suitable foraging habitat for this species, but there are no records of this species breeding in the BSA (G. Kittleson, personal

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
				communication, March 27, 2025).
Athene cunicularia (burrow sites and some wintering sites)	burrowing owl	None/SSC, SC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	**Low potential to occur.** This species is a winter visitor and is not known to breed in the BSA (G. Kittleson, personal communication, March 27, 2025)
Brachyramphus marmoratus (nesting)	marbled murrelet	FT/SE	Nests in old-growth coastal forests, forages in subtidal and pelagic habitats	**Not expected to occur.** There are no CNDDB records of this species within the BSA.
Charadrius nivosus nivosus (nesting)	western snowy plover	FT /SSC	On coasts nests on sandy marine and estuarine shores; in the interior nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	**Low potential to occur.** The BSA contains suitable habitat for this species and there are two CNDDB records in the BSA, one at Natural Bridges and one on Santa Cruz beach (CDFW 2025a; Occ. No. 62 & 63). However, these records are more than twenty years old.
Coturnicops noveboracensis	yellow rail	None/SSC	Nesting requires wet marsh/sedge meadows or coastal marshes with wet soil and shallow, standing water	**Low potential occur.** The BSA contains suitable habitat for this species, but there are no modern CNDDB records of this species within the BSA.
Cypseloides niger (nesting)	black swift	None/SSC	Nests in moist crevices, caves, and cliffs behind or adjacent to waterfalls in deep canyons; forages over a wide range of habitats	**Low potential to occur.** The BSA contains suitable nesting habitat along West Cliff Drive, however, there are no modern records of this species within the BSA.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	**Moderate potential to occur.** There are numerous observations of this species in the western half of the BSA during the breeding season, particularly around Natural Bridges, Moore Creek, Jordan Gulch, and Pogonip (iNaturalist 2025, eBird 2025).
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None/SSC	Nests and forages in emergent wetlands including woody swamp, brackish marsh, and freshwater marsh	**Not expected to occur.** The BSA contains suitable habitat for this species, however, the BSA is outside its known range. The nearest CNDDB record to the BSA is a 1988 observation from Davenport (CDFW 2025a; Occ. No. 60).
Gymnogyps californianus	California condor	FE/FP, SE	Nests in rock formations, deep caves, and occasionally in cavities in giant sequoia trees (*Sequoiadendron giganteus*); forages in relatively open habitats where large animal carcasses can be detected	**Not expected to occur.** The BSA contains suitable foraging habitat for this species, but there are no CNDDB or iNaturalist records of this species in the BSA.
Haliaeetus leucocephalus (nesting and wintering)	bald eagle	FPD/FP, SE	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	**Low potential to occur.** The BSA contains suitable foraging habitat for this species, but there are no records of successful nesting within the BSA (G. Kittleson, personal communication, March 27, 2020).

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
Laterallus jamaicensis coturniculus	California black rail	None/FP, ST	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	**Not expected to occur.** The BSA contains suitable habitat for this species, but there are no modern CNDDB or iNaturalist records of this species within the BSA.
Pandion haliaetus (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	**Low potential to occur.** The BSA contains suitable foraging habitat, but the BSA is outside the breeding range of the species.
Phoebastria albatrus	short-tailed albatross	FE/SSC	Nests on isolated, windswept islands of the western Pacific; extremely rare in migration offshore along the California coast	**Not expected to occur.** Suitable habitat is absent from the BSA.
Riparia riparia (nesting)	bank swallow	None/ST	Nests in riparian, lacustrine, and coastal areas with vertical banks, bluffs, and cliffs with sandy soils; open country and water during migration	**Low potential to occur.** The BSA contains suitable nesting habitat for this species, however, there are no modern CNDDB records of this species in the BSA.
Sternula antillarum browni (nesting colony)	California least tern	FE/FP, SE	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	**Not expected to occur.** The BSA contains suitable foraging and nesting habitat, however, there are no CNDDB or iNaturalist records of this species within the BSA.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	**Not expected to occur.** The BSA is outside the known range of the species and there are no CNDDB or iNaturalist records of this species in the BSA.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in man-made structures and trees	**Low potential to occur.** The BSA contains suitable habitat for this species, but there have been no modern CNDDB or iNaturalist records of this species in the BSA.
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, man-made structures, and tunnels	**Moderate potential to occur.** The BSA provides suitable roosting and foraging habitat for this species, although there have been no modern CNDDB records of this species in the BSA.
Enhydra lutris nereis	southern sea otter	FT/SSC, FP	Nearshore marine environments	**Low potential to occur.** The BSA does not contain suitable nearshore marine environments.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	None/SSC	Forest habitats with a moderate canopy and moderate to dense understory	**High potential to occur.** This species was observed at Natural Bridges and Arana Gulch during the 2025 field assessment.
Puma concolor	mountain lion - Southern California/Central Coast ESU	None/SC	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	**Low potential to occur.** The BSA contains suitable movement habitat for this species. Several GPS-collared male pumas have been documented moving along the creeks in the BSA (Males 26, 39 & 56; Santa Cruz Puma Project 2025). However, the species is unlikely to den so close to urban development.

Scientific Name	Common Name	Status* (Federal/State)	Habitat	Potential to Occur in Biological Study Area
Taxidea taxus	American badger	None/SSC	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	**Low potential to occur.** The BSA does not contain suitable habitat for this species, however, the species may move through the BSA from time to time. There is one CNDDB record from 2004 of this species near Jordan Gulch (CDFW 2025a; Occ. No. 341).
Lasiurus frantzii	western red bat	None/SSC	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	**High potential to occur.** The BSA contains suitable habitat for this species. There are two research-grade iNaturalist observations of this species in the BSA, one near Jordan Gulch in 2018 and one near Paradise Park in 2023 (iNaturalist 2025).

***Status:**
FE: Federally Endangered
FT: Federally Threatened
FP: Fully Protected Species
SE: State Endangered
ST: State Threatened
SC: State Candidate for Listing
SSC: Species of Special Concern
WL: CDFW Watch List Species

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Attachment F

Routine Maintenance Project Best Management Practices (BMPs)

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Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
General			
1	Routine maintenance work shall be conducted from June 15 to October 15, except work within seasonally dry stream channels may be allowed between May 15 and June 14, and work may be extended to October 31 during dry seasons with CDFW written concurrence.	All work, except abatement of unsheltered population camps and trash would be conducted year round, and January 1 to May 31 for burrowing rodent management	RMP ASHCP-LM17 CDFW
2	Conduct activities outside of the wetted channel whenever feasible by timing work to the low flow season or by utilizing equipment or methods that do not require access or equipment in the channel. No equipment shall be operated in wetted areas of a stream (including flowing or ponded water) at any time, except as may be necessary to construct coffer dams to divert stream flow and isolate the work site when replacing culverts.	Work around water bodies	RMP ASHCP-WO1 CDFW
3	Routine maintenance activities within stream and riparian corridor shall be restricted to daylight hours during dry weather periods.	Activities within stream and riparian corridor	RMP CDFW
4	Staging areas shall be located at least 30 feet from the top of bank or on the outboard side of levees.	Activities within stream and riparian corridor	CDFW
Special-Status Species and Habitat Protection			
5	A qualified biologist shall conduct a survey within and adjacent to proposed routine maintenance work areas within 48 hours prior to start of work in areas identified as having potential habitat for special-status species, including California red-legged frog (CRLF), northwestern pond turtle (NWPT), San Francisco dusky-footed woodrat (SFDFW), and special status bat species, in accordance with any applicable agency protocols. A qualified botanist shall conduct appropriately timed special-status plant surveys prior to vegetation removal activities at the appropriate period when these species are evident and identifiable.	Locations with potential special status species as specified in Biological Resources Review	RMP OMHCP SSM-12, 21, 27 ASHCP-WO1 CDFW
6	If CRLF are detected during the preconstruction survey, maintenance activities shall not commence until after May 30. If CRLF are detected during Project activities, all vehicles in the work area shall be inspected for frogs prior to moving those vehicles and any vegetation removed shall be placed directly into a disposal vehicle and not be stockpiled onsite. Implement CRLF monitoring and relocation, if needed, by a U.S. Fish and Wildlife (USFWS)-approved biologist in accordance with OMHCP SSM-11 through SSM-19.	All maintenance activities at locations with identified CRLF habitat	OMHCP SSM-11 through 19 CDFW
7	If NWPT is observed during preconstruction surveys, it shall be left to move out of the area on its own. If it does not leave on its own, a qualified biologist can relocate it to suitable habitat at least 300-ft away from the Project. If a NWPT nest is found, all Project activities shall cease, and the City shall contact CDFW for specific avoidance and minimization measures. Implement NWPT monitoring and relocation, if needed, by a	All maintenance activities at locations with identified NWPT habitat	OMHCP SSM-20 through 26 CDFW

[1] See notes at end of table for explanation.

Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
	U.S. Fish and Wildlife (USFWS)-approved biologist in accordance with Operations and Maintenance OMHCP SSM-11 through SSM-19.		
8	A qualified biologist shall conduct a focused survey for roosting bats seven days prior to commencement of any maintenance activity involving disturbance to vegetation or culverts. Roosting habitat features shall be flagged or marked for avoidance. If any of the identified roosting habitat features will be altered or disturbed by maintenance activities, City shall contact CDFW for further guidance. Any attempt to directly disturb (e.g., shake, prod) roosting features is prohibited. If individual bats or colonies are detected during the survey, CDFW shall be notified immediately	Work sites where culverts and/or trees would be removed or disturbed for a period of more than 2 hours	CDFW
9	Any San Francisco dusky-footed woodrat (SFDFW) midden found in a maintenance area shall be protected with establishment of flagging or a fence barrier surrounding the nest site and avoided. A minimum distance of 25 feet shall be used for the no-disturbance buffer protecting the midden. If SFDFW middens cannot be avoided, the City shall submit a SFDFW Midden Relocation Plan to CDFW for approval.	All maintenance activities at locations with identified woodrat middens	CDFW
9	Conduct pre-construction nesting bird surveys within 7 days of maintenance activities if specified activities occur between February 1 and August 31, and if nesting species are present, buffers shall be established in accordance with CDFW requirements.	Activities within or adjacent to riparian corridors, including tree trimming or removal, mowing, and sediment removal	RMP CDFW CCWMP
10	Conduct an education program for all persons working on a maintenance activity by a CDFW-approved qualified biologist in accordance with CDFW requirements. This training will include a presentation of the potential for sensitive species to occur at the site and measures to protect habitat including aquatic habitat and avoid impacts to the species.	All maintenance activities	RMP OMHCP GM-4, SSM-12, 22 CDFW
11	Prior to the start of Project activities, a qualified biologist shall clearly mark/flag or erect temporary construction fencing to designate the work area and to delineate the areas that shall be avoided. Sensitive habitat areas, including special status plant species population boundaries or critical habitat and identified nesting bird locations, shall be demarcated in consultation with a qualified biologist, to avoid impacts to protected species and sensitive habitat. The boundaries shall be inspected on a regular basis to ensure that work has remained within the marked boundaries, and flagging and/ or temporary construction fencing shall be removed immediately after the completion of maintenance work.	Locations specified in Biological Resources Review	OMHCP-SSM-1 CDFW 2.13, 2.62
12	A qualified biologist or biological monitor shall be present during maintenance activities where special status species have been documented or are likely to occur, and as recommended upon completion of the pre-construction biological surveys.	Locations and activities specified in Biological Resources Review	ASHCP-LM-21 CDFW
13	The spread or introduction of invasive, non-native plant species will be avoided to the extent practicable as specified in the City's Operations and Maintenance HCP (GM-3). Invasive plant material shall be disposed of offsite.	All locations	OMHCP-GM-3 CDFW

Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
14	Any aquatic nonnative invasive species found shall be disposed of properly and shall not be placed back into the creek where work is being conducted or any other drainages, creeks or streams.	All locations	CDFW
Erosion Control and Water Quality Protection			
15	All refueling, maintenance, and staging of equipment and vehicles will occur at least 65 feet from any riparian habitat or water body. The City will ensure contamination of habitat does not occur during such operations.	Activities within 65 feet of channel	RMP ASHCP-WO13 OMHCP-GM-2 CDFW
16	Provide regular maintenance and inspection of equipment to prevent leaks. Any equipment or vehicles driven and/or operated adjacent to the stream shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat.	All activities involving equipment	RMP CDFW
17	Prior to the onset of work, the City will ensure that the contractor has prepared a plan to allow a prompt and effective response to any accidental spills. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.	All locations	OMHCP-GM-2
18	Install erosion control as necessary, including silt fences, straw wattles, native duff, straw, jute netting, to protect and stabilize exposed soils upon completion of maintenance to prevent erosion into the stream channel.	Culvert maintenance, sediment removal	ASHCP-LM-11 OMHCP-GM-10 CDFW
19	Install erosion control measures for surface stabilization following culvert removal (straw, seed, straw rolls, blankets, etc.), and replant the disturbed area with native species, particularly conifer and riparian species.	Culvert maintenance	ASHCP-LM-13
Flood Control Maintenance			
20	Only remove material that creates a hazard to life, property, infrastructure, or public safety.	Debris/obstruction removal	RMP ASHCP-MF-1
21	Embedded pieces of large woody debris or stumps that potentially serve as basking sites or that encourage pool formation shall be left in place if it does not obstruct the flow of water and there is adequate flood flow capacity.	Debris/obstruction removal	RMP CDFW
22	Whenever possible leave natural habitat-forming material in the stream by moving it downstream of structures to be protected or cutting larger material into smaller segments that may float downstream in larger flows, as long as these segments retain habitat forming characteristics.	Debris/obstruction removal	ASHCP-MF-3
23	Allow retention of up to 3-foot square root wads in the channel every 500 feet for habitat value, provided there are no undesirable changes in channel hydraulics and provided such root wads do not show signs of developing into larger log jam structures in the future.	Debris/obstruction removal	ASHCP-MF-4
24	Conduct sediment removal only as necessary to maintain and/or restore capacity of stormwater conveyance facilities or to prevent flood events; define sediment removal areas in the San Lorenzo River flood control channel (FCC) by cross section and HEC-6 analysis.	Flood control sediment management/removal	RMP ASHCP-MF-5

Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
25	Conduct annual surveys to identify vegetation characteristics and sediment aggradation within the San Lorenzo River FCC between Highway 1 and Soquel Avenue, and in the Branciforte Creek FCC.	Flood control sediment management/removal	RMP ASHCP-MF-7
26	Do not conduct sediment removal in San Lorenzo River FCC downstream of Laurel Street, except for sediment removal around gravity outlets when water is not present.	Flood control sediment management/removal	ASHCP-MF-10
27	In the San Lorenzo River FCC, maintain a minimum of a 5-foot vegetation no-work buffer along both sides of the wetted channel where sediment removal activities will not occur.	Flood control sediment management/removal	ASHCP-MF-8
Vegetation Management			
28	Conduct vegetation management late in the dry season, preferably August, except September 1-October 15 in San Lorenzo River, with extension to October 31 in all Project locations with CDFW approval.	Vegetation management	ASHCP-MF-13
29	The disturbance or removal of vegetation shall not exceed the minimum necessary to accomplish maintenance needs. No removal of vegetation within 10 feet of an active channel shall occur in waterways supporting salmonids.	Vegetation management	CDFW
30	Avoid vegetation management in the wetted channel to the maximum extent practicable.	Vegetation management	ASHCP-MF-12
31	Do not remove mature riparian trees except in the San Lorenzo River FCC and Branciforte Creek FCC; riparian shrubs may be trimmed from ground level up to 6-8 feet in height. Remove cuttings from the work area and recycle as green waste at the landfill or chip and haul offsite.	Vegetation management	ASHCP-MF-11
32	Selectively remove riparian vegetation along the San Lorenzo River that could possibly undermine the stability of the levees or exceeds accepted Army Corps of Engineers' "Manning's n roughness coefficient" for the FCC. Retain a minimum 5-foot vegetated buffer on either side of the wetted channel.	Vegetation management	ASHCP-MF-14
33	Except along the San Lorenzo River, no trees (native or non-native) over four (4) inches diameter at breast height (DBH) shall be removed without written approval from CDFW and shall be replaced at a 1:1 ratio.	Vegetation management	CDFW
34	In the San Lorenzo River reach from Highway 1 to Water St., allow 10-foot-wide strip of willow and alder along toe of levee. Willows are allowed to grow to 3 inches dbh; alders allowed to grow to 6 inches dbh. Trim lower limbs of the alder trees to reduce flood impacts. Thin willows to favor providing overhanging cover to the low flow channel. Maintain a 5-foot buffer along wetted edges of channel, but thin groves and limb-up trees. Remove any trees in 5-foot buffer area that are greater than 6 inches dbh.	Vegetation management	ASHCP-MF-15 LSLRLMP
35	In the San Lorenzo River reach from Water St. to Laurel St. maintain a 10-foot-wide strip of woody riparian vegetation and tules and cattails on the west bank. Maintain east bank to keep trees overhanging water. Trees or branches that fall in the water may be left, cut into smaller pieces, or removed entirely if they cause an immediate safety hazard. Maintain sandbars to allow volunteer groves to establish but remove all trees greater than 6 inches dbh.	Vegetation management	ASHCP-MF-16 LSLRLMP

Routine Maintenance Project Best Management Practices (BMPs)

BMP	BMP Description	Applicable Activities	Source[1]
36	In the San Lorenzo River reach downstream of Laurel St. maintain a 5-foot-wide strip of willow, cattail and tule at the levee toe. Willows will be maintained with stem diameter of no greater than 0.5 inches and be limbed-up and periodically thinned to create defined groves.	Vegetation management	ASHCP-MF-17 LSLRLMP

NOTES:
ASHCP-Included in Draft Anadromous Salmonid Habitat Conservation Plan
CDFW-typically required by CDFW
CCWMP-included in Citywide Creeks and Wetlands Management Plan
LSLRLMP-included in Lower San Lorenzo River & Lagoon Management Plan
OMHCP-included in City of Santa Cruz Operations and Management Habitat Conservation Plan
RMP-Typically conducted by City as part of routine maintenance