Coastal Rail Trail Segments 8 and 9

Draft Environmental Impact Report

State Clearinghouse #2021090262

City of Santa Cruz

September 2022

Coastal Rail Trail Segments 8 and 9
Draft Environmental Impact Report

Prepared by

809 Center Street, Room 201

Santa Cruz, California 95060

Contact: Nathan Nguyen

With technical assistance from

Harris & Associates

Salinas, California

Rincon Consultants

Monterey, California

EcoSystems West Consulting

Santa Cruz, California

September 2022

This report prepared on 50% recycled paper with 50% post-consumer content

City of Santa Cruz. 2022. *Draft Environmental Impact Report for the Coastal Rail Trail Segments 8 and 9*. September 2022.

This page intentionally left blank.

Table of Contents

Acronyms and Abbreviations xi
Executive Summary ES-1
Project Synopsis ES-1
Project Purpose and Objectives ES-3
Project Alternatives ES-3
Areas of Known Controversy and Key Issues ES-4
Summary of Impacts and Mitigation Measures ES-4
1 Introduction 1-1
1.1 EIR Purpose and City Legal Authority 1-3
1.2 Project Background 1-3
1.2.1 Project Inception and Rail Purchase 1-3
1.2.2 Rail Operation and Maintenance 1-4
1.2.3 MBSST Network Master Plan and EIR 1-4
1.2.4 Subsequent Actions and Considerations 1-6
1.3 CEQA Environmental Review Process 1-9
1.3.1 Lead, Responsible, and Trustee Agencies 1-10
1.3.2 Notice of Preparation 1-12
1.3.3 Scoping Process 1-12
1.4 EIR Scope and Content 1-14
1.5 EIR Organization 1-14
1.6 Public Outreach 1-15
2 Project Description 2-1
2.1 Overview 2-1
2.2 Project Location 2-2
2.3 Project Purpose and Objectives 2-2
2.4 Project Characteristics 2-4
2.4.1 Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) 2-4
2.4.2 Optional First Phase: Trail on the Rail Line (Interim Trail) 2-12
2.5 Project Operation and Maintenance 2-16

2.6 Project Construction 2-18
2.6.1 Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) 2-18
2.6.2 Optional First Phase: Trail on the Rail Line (Interim Trail) 2-25
2.7 Required Permits and Approvals 2-29
3 Environmental Impact Analysis 3-1
Approach to Project Analysis 3-1
Existing Conditions and Regulatory Setting 3-2
Impacts and Mitigation Measures 3-2
Approach to Cumulative Impacts 3-3
Summary of Impacts and Mitigation Measures 3-4
3.1 Aesthetics 3.1-1
3.1.1 Existing Conditions 3.1-1
3.1.2 Regulatory Setting 3.1-3
3.1.3 Methodology and Significance Thresholds 3.1-6
3.1.4 Project Impact Analysis 3.1-9
3.1.5 Summary Comparison 3.1-27
3.2 Air Quality 3.2-1
3.2.1 Existing Conditions 3.2-1
3.2.2 Regulatory Setting 3.2-6
3.2.3 Methodology and Significance Thresholds 3.2-9
3.2.4 Project Impact Analysis 3.2-11
3.2.5 Summary Comparison 3.2-22
3.3 Biological Resources 3.3-1
3.3.1 Existing Conditions 3.3-2
3.3.2 Regulatory Setting 3.3-42
3.3.3 Methodology and Significance Thresholds 3.3-54
3.3.4 Project Impact Analysis 3.3-55
3.3.5 Summary Comparison 3.3-121
3.4 Cultural Resources 3.4-1
3.4.1 Existing Conditions 3.4-1
3.4.2 Regulatory Setting 3.4-3
3.4.3 Methodology and Significance Thresholds 3.4-8

3.4.4 Project Impact Analysis 3.4-9
3.4.5 Summary Comparison 3.4-19
3.5 Geology and Soils 3.5-1
3.5.1 Existing Conditions 3.5-1
3.5.2 Regulatory Setting 3.5-8
3.5.3 Methodology and Significance Thresholds 3.5-12
3.5.4 Project Impact Analysis 3.5-14
3.5.5 Summary Comparison 3.5-28
3.6 Greenhouse Gas Emissions/Climate Change 3.6-1
3.6.1 Existing Conditions 3.6-1
3.6.2 Regulatory Setting 3.6-4
3.6.3 Methodology and Significance Thresholds 3.6-11
3.6.4 Project Impact Analysis 3.6-13
3.6.5 Summary Comparison 3.6-21
3.7 Hazards and Hazardous Materials 3.7-1
3.7.1 Existing Conditions 3.7-1
3.7.2 Regulatory Setting 3.7-10
3.7.3 Methodology and Significance Thresholds 3.7-17
3.7.4 Project Impact Analysis 3.7-18
3.7.5 Summary Comparison 3.7-29
3.8 Hydrology and Water Quality 3.8-1
3.8.1 Existing Conditions 3.8-1
3.8.2 Regulatory Setting 3.8-6
3.8.3 Methodology and Significance Thresholds 3.8-15
3.8.4 Project Impact Analysis 3.8-16
3.8.5 Summary Comparison 3.8-31
3.9 Land Use and Planning 3.9-1
3.9.1 Existing Conditions 3.9-1
3.9.2 Regulatory Setting 3.9-3
3.9.3 Methodology and Significance Thresholds 3.9-8
3.9.4 Project Impact Analysis 3.9-8
3.9.5 Summary Comparison 3.9-23

3.10 Noise 3.10-1
3.10.1 Existing Conditions 3.10-1
3.10.2 Regulatory Setting 3.10-4
3.10.3 Methodology and Significance Thresholds 3.10-6
3.10.4 Project Impact Analysis 3.10-7
3.10.5 Summary Comparison 3.10-15
3.11 Public Safety and Services 3.11-1
3.11.1 Existing Conditions 3.11-1
3.11.2 Regulatory Setting 3.11-5
3.11.3 Methodology and Significance Thresholds 3.11-8
3.11.4 Project Impact Analysis 3.11-9
3.11.5 Summary Comparison 3.11-20
3.12 Transportation 3.12-1
3.12.1 Existing Conditions 3.12-1
3.12.2 Regulatory Setting 3.12-5
3.12.3 Methodology and Significance Thresholds 3.12-10
3.12.4 Project Impact Analysis 3.12-12
3.12.5 Summary Comparison 3.12-20
3.13 Tribal Cultural Resources 3.13-1
3.13.1 Existing Conditions 3.13-1
3.13.2 Regulatory Setting 3.13-2
3.13.3 Methodology and Significance Thresholds 3.13-4
3.13.4 Project Impact Analysis 3.13-5
3.13.5 Summary Comparison 3.13-8
3.14 Utilities and Service Systems 3.14-1
3.14.1 Existing Conditions 3.14-1
3.14.2 Regulatory Setting 3.14-5
3.14.3 Methodology and Significance Thresholds 3.14-10
3.14.4 Project Impact Analysis 3.14-11
3.14.5 Summary Comparison 3.14-25
3.15 Effects Found to be Less than Significant 3.15-1
3.15.1 Aesthetics 3.15-1

3.15.2 Agriculture and Forestry Resources 3.15-2
3.15.3 Energy 3.15-3
3.15.4 Geology and Soils 3.15-3
3.15.5 Hazards and Hazardous Materials 3.15-4
3.15.6 Mineral Resources 3.15-5
3.15.7 Noise 3.15-6
3.15.8 Population and Housing 3.15-6
3.15.9 Public Safety and Services 3.15-7
3.15.10 Recreation 3.15-7
3.15.11 Transportation 3.15-8
3.15.12 Wildfire 3.15-9
4 Other CEQA-Required Discussions 4-1
4.1 Cumulative Impact Analysis 4-1
4.1.1 Methodology 4-1
4.1.2 Aesthetics 4-7
4.1.3 Air Quality 4-8
4.1.4 Biological Resources 4-9
4.1.5 Cultural Resources 4-12
4.1.6 Energy 4-13
4.1.7 Geology and Soils 4-13
4.1.8 Greenhouse Gas Emissions/Climate Change 4-14
4.1.9 Hazards and Hazardous Materials 4-15
4.1.10 Hydrology and Water Quality 4-16
4.1.11 Land Use and Planning 4-17
4.1.12 Noise 4-18
4.1.13 Public Safety and Services 4-19
4.1.14 Recreation 4-20
4.1.15 Transportation 4-20
4.1.16 Tribal Cultural Resources 4-21
4.1.17 Utilities and Service Systems 4-22
4.1.18 Wildfire 4-24
4.2 Growth Inducement 4-25
4.2.1 Employment, Household, and Population Growth 4-26

4.2.2 Removal of Obstacles to Growth 4-26
4.3 Irreversible Environmental Effects 4-26
4.4 Significant and Unavoidable Effects 4-27
5 Project Alternatives 5-1
5.1 Development of Alternatives 5-1
5.2 Alternatives Evaluated in Draft EIR 5-16
5.3 Environmentally Superior Alternative 5-42
6 List of Preparers and References 6-1
6.1 List of Preparers 6-1
6.2 Bibliography 6-3

Appendices

A, Project Design Plans
A.1, Ultimate Trail Configuration
A.2, Optional Interim Trail
A.3, East Harbor Connection (Design Option)
B, NOP and Scoping Comments
C, Initial Study
D, Air Quality and GHG Modeling Assumptions
E, Biological Resources
E.1, Special Status Plants/Wildlife Potential to Occur
E.2, USFWS Official Species List
E.3, Vascular Plant Species Observed
E.4, Sensitive Plant/Wildlife Species Narrative
E.5, Bird Species Observed by Habitat
F, Cultural Resources
G, Traffic Technical Memorandum

Tables

Table ES-1 Summary of Project Impacts ES-7
Table ES-2 Summary of Mitigation Measures Identified for Proposed Project and Project Alternatives ES-14
Table ES-3 Comparison of Impacts for Proposed Project and Project Alternatives ES-16
Table 1-1 Segments 8 and 9 Project Funding Sources 1-7
Table 1-2 Summary of NOP Comments Received 1-12

Table 2-1 Estimated Construction Duration for the Ultimate Trail Configuration 2-18
Table 2-2 Construction Estimates for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) 2-22
Table 2-3 Construction Estimates for East Harbor Connection Design Option 2-23
Table 2-4 Construction Estimates for Optional First Phase: Trail on the Rail Line (Interim Trail) 2-28
Table 2-5 Anticipated Approvals, Permits, and Agreements Required for Proposed Project 2-29
Table 3.1-1 Summary of Project Impacts on Aesthetics 3.1-1
Table 3.1-2 City of Santa Cruz and County of Santa Cruz County General Plan Policy Consistency Analysis 3.1-22
Table 3.2-1 Summary of Project Impacts Related to Air Quality 3.2-1
Table 3.2-2 Current Federal and State Ambient Air Quality Standards 3.2-4
Table 3.2-3 Santa Cruz County Air Basin Attainment Status 3.2-5
Table 3.2-4 Ambient Air Quality Data 3.2-5
Table 3.2-5 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) – Ultimate Trail Configuration 3.2-14
Table 3.2-6 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) – Implementation of Interim Trail (Rail Removal and Trail Construction) 3.2-16
Table 3.2-7 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) – Demolition of Interim Trail and Rebuilding Rail Line 3.2-17
Table 3.3-1 Summary of Project Impacts on Biological Resources 3.3-1
Table 3.3-2 Habitat Types in Rail Trail Segment 8/9 Study Area and Project Footprint 3.3-7
Table 3.3-3 Sensitive Habitats and Regulatory Authority Considered Under CEQA 3.3-20
Table 3.3-4 Wildlife Movement along Segments 8/9 of the Rail Corridor, Santa Cruz County, CA 3.3-39
Table 3.3-5 Monarch Roost Sites, Proposed Tree Removal, and Acreage of Permanent Impacts for the Proposed Project 3.3-62
Table 3.3-6 Temporary and Permanent Impacts to Sensitive Habitat from the Proposed Project 3.3-95
Table 3.3-7 Preferred Timing for Construction Activities Listed by Biological Resource 3.3-101
Table 3.3-8 Tree Removal Required for Construction and Operation of the Proposed Project 3.3-117
Table 3.4-1 Summary of Project Impacts on Cultural Resources 3.4-1
Table 3.5-1 Summary of Project Impacts on Geology and Soils 3.5-1
Table 3.5-2 Geologic Unit Sensitivity 3.5-8

Table 3.6-1 Summary of Project Impacts Related to Greenhouse Gas Emissions/ Climate Change 3.6-1
Table 3.7-1 Summary of Project Impacts on Hazards and Hazardous Materials 3.7-1
Table 3.7-2 Hazardous Materials Sites near the Project Corridor 3.7-6
Table 3.8-1 Summary of Project Impacts on Hydrology and Water Quality 3.8-1
Table 3.8-2 Beneficial Uses of Waterbodies in the Project Corridor 3.8-4
Table 3.9-1 Summary of Impacts on Land Use and Planning 3.9-1
Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis 3.9-14
Table 3.9-3 City of Santa Cruz General Plan Policy Consistency Analysis 3.9-20
Table 3.10-1 Summary of Project Impacts Related to Noise 3.10-1
Table 3.10-2 Human Response to Groundborne Vibration 3.10-3
Table 3.10-3 Federal Transit Administration Groundborne Vibration Impact Criteria 3.10-4
Table 3.10-4 Typical Construction Noise Levels 3.10-8
Table 3.10-5 Vibration Source Levels for Construction Equipment 3.10-13
Table 3.11-1 Summary of Impacts on Public Safety and Services 3.11-1
Table 3.12-1 Summary of Project Impacts on Transportation 3.12-1
Table 3.13-1 Summary of Project Impacts on Tribal Cultural Resources 3.13-1
Table 3.14-1 Summary of Impacts on Utilities and Service Systems 3.14-1
Table 3.14-2 Thresholds Addressed in Impact Discussions 3.14-11
Table 3.14-3 Summary of Solid Waste Generation during Construction 3.14-24
Table 4-1 List of Cumulative Projects 4-2
Table 4-2 Summary of Project Contribution to Significant Cumulative Impacts 4-7
Table 5-1 Summary of Alternatives Considered 5-13
Table 5-2 Project Objectives and Alternative Trail Alignments 5-15
Table 5-3 Comparison of Impacts for Proposed Project and Project Alternatives 5-47
Table 5-4 Summary of Mitigation Measures Identified for Proposed Project and Project Alternatives 5-57
Table 5-5 Summary Comparison of Impacts and Environmentally Superior Alternative by Resource Topic 5-59

Figures

Figure 1-1 Regional Location 1-2
Figure 1-2 CEQA EIR Process 1-11
Figure 2-1 Project Location 2-3
Figure 2-2 Representative Illustration of Proposed Project 2-5

Figure 3.1-1 Key View Point and Rendering Locations 3.1-8
Figure 3.1-2 Key View Point 1 ..... 3.1-13
Figure 3.1-3 Key Viewpoint 2 ..... 3.1-14
Figure 3.1-4 Key Viewpoint 3 ..... 3.1-15
Figure 3.1-5 Key Viewpoint 4 ..... 3.1-16
Figure 3.1-6 Key Viewpoints 5 and 6 ..... 3.1-17
Figure 3.1-7 Project Renderings 3.1-18
Figure 3.3-1 Habitat Types – Index 3.3-8
Figure 3.3-1a Habitat Types 3.3-9
Figure 3.3-1b Habitat Types 3.3-10
Figure 3.3-1c Habitat Types 3.3-11
Figure 3.3-1d Habitat Types 3.3-12
Figure 3.3-2 Sensitive Habitat – Index 3.3-21
Figure 3.3-2a Sensitive Habitat 3.3-22
Figure 3.3-2b Sensitive Habitat 3.3-23
Figure 3.3-3 Aquatic Resources – Index 3.3-24
Figure 3.3-3a Aquatic Resources 3.3-25
Figure 3.3-3b Aquatic Resources 3.3-26
Figure 3.3-4 Sensitive Plants and Wildlife Species – Index 3.3-30
Figure 3.3-4a Sensitive Plants and Wildlife Species 3.3-31
Figure 3.3-4b Sensitive Plants and Wildlife Species 3.3-32
Figure 3.5-1 Major Faults 3.5-5
Figure 3.5-2 Liquefaction Zones 3.5-6
Figure 3.5-3 Segment 9 Paleontolgical Resources Sensitivity 3.5-7
Figure 3.6-1 Potential Future Tidal Inundation Area 3.6-5
Figure 3.6-2 Potential Future Storm Flooding Hazard Area 3.6-6
Figure 3.7-1 Contaminated Sites in Project Vicinity 3.7-7
Figure 3.8-1 Project Stream Crossing 3.8-7
Figure 3.8-2 Groundwater Basins 3.8-8
Figure 3.8-3 Tsunami Inundation Areas 3.8-9
Figure 3.9-1a County of Santa Cruz General Plan Land Use Designations – Segment 9 (Western Portion) 3.9-24
Figure 3.9-1b County of Santa Cruz General Plan Land Use Designations – Segment 9 (Eastern Portion) 3.9-25

Figure 3.9-2a County of Santa Cruz Zoning Districts – Segment 9 (Western Portion) 3.9-26
Figure 3.9-2b County of Santa Cruz Zoning Districts – Segment 9 (Eastern Portion) 3.9-27
Figure 3.9-3a City of Santa Cruz General Plan Land Use Designations – Segment 8 and Segment 9 (Western Terminus) 3.9-28
Figure 3.9-3b City of Santa Cruz General Plan Land Use Designations – Segment 9 (Western Portion) 3.9-29
Figure 3.9-3c City of Santa Cruz General Plan Land Use Designations – Segment 9 (Eastern Portion) 3.9-30
Figure 3.9-4a City of Santa Cruz Zoning Districts – Segment 8 and Segment 9 (Western Terminus) 3.9-31
Figure 3.9-4b City of Santa Cruz Zoning Districts – Segment 9 (Western Portion) 3.9-32

Acronyms and Abbreviations

$\mu g/m^3$	micrograms per cubic meter
2045 MTP/SCS	2045 Metropolitan Transportation Plan/Sustainable Community Strategy
AAQS	Ambient Air Quality Standards
AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ACM	asbestos-containing materials
ADA	Americans with Disabilities Act
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
AMBAG	Association of Monterey Bay Area Governments
AMR	American Medical Response
AQMP	Air Quality Management Plan
AST	aboveground storage tank
ATP	Active Transportation Program
BAAQMD	Bay Area Air Quality Management District
BCC	Birds of Conservation Concern
BCE	before Common Era
BMP	best management practice
Boardwalk	Santa Cruz Beach Boardwalk
CAA	federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalARP	California Accidental Release Prevention Program
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalOES	California Office of Emergency Services
CalOSHA	California Occupational Safety and Health Administration
CAP 2030	2030 Climate Action Plan
CARB	California Air Resources Board
CAS	Climate Action Strategy

CBC	California Building Code
CCC	California Coastal Commission
CCR	California Code of Regulations
CCRWQCB	Central Coast Regional Water Quality Control Board
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CE	Common Era
CEHC	California Essential Habitat Connectivity
CEQA	California Environmental Quality Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CFD	Central Fire District of Santa Cruz County
CFGC	California Fish and Game Code
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Construction General Permit	General Permit for Discharges of Stormwater Associated with Construction Activity
CPS-SLIC	Cleanup Program Sites-Spills, Leaks, Investigations, and Cleanups
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
CY	cubic yard
dB	decibel
dBA	A-weighted decibel
DBH	diameter at breast height
DPR	California Department of Pesticide Regulation
EFH	Essential Fish Habitat
EIR	Environmental Impact Report

EO	Executive Order
ESA	Environmental Site Assessment
ESHA	Environmental Sensitive Habitat Areas
ESU	Evolutionarily Significant Unit
EVH	Especially valuable habitat
FAR	floor area ratio
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FRP	fiberglass reinforced polymer
GHG	greenhouse gas
gpd	gallons per day
GWP	global warming potential
HA	hydrologic area
Hist UST	Historical UST Registered Database
HMA	hot mix asphalt
HR	hydrologic region
HU	hydrologic unit
HWTS	Hazardous Waste Tracking System
Hz	hertz
IPCC	Intergovernmental Panel on Climate Change
ISA	Initial Site Assessment
IUCN	International Union for Conservation of Nature
LBP	lead-based paint
lbs	pounds
LCP	Local Coastal Program
Ldn	Day-Night Noise Level
LED	light-emitting diode
Leq	Equivalent Noise Level
LHMP	Local Hazard Mitigation Plan
LOS	level of service
LSAA	Lake and Streambed Alteration Agreement
LUST	Leaking Underground Storage Tank

MACT	Maximum Achievable Control Technology
MBARD	Monterey Bay Air Resources District
MBNMS	Monterey Bay National Marine Sanctuary
MBSST	Monterey Bay Sanctuary Scenic Trail
METRO	Santa Cruz Metropolitan Transit District
MMC	Marine Mammal Commission
MMP	Mitigation and Management Plan
MMT	million metric tons
MPCB	Master Plan of County Bikeways
MT	metric ton
MTP/SCS	Metropolitan Transportation Plan and Sustainable Communities Strategy
N_2O	nitrous oxides
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NIMS	National Incident Management System
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
OHWM	ordinary high-water mark
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PAH	polynuclear aromatic hydrocarbon
PCE	Perchloroethylene
PG&E	Pacific Gas & Electric
PM_{10}	particulate matter 10 microns or less in size
$PM_{2.5}$	particulate matter 2.5 microns or less in size
Porter-Cologne Act	Porter-Cologne Water Quality Control Act

ppm	parts per million
PPV	peak particle velocity
PRC	California Public Resources Code
RCEM	Roadway Construction Emissions Model
RCRA	Resource Conservation and Recovery Act
RCRA-LQG	Resource Conservation and Recovery Act-Large Quantity Generators
RCRA-Nongen	Resource Conservation and Recovery Act-Non Generators
RMP	Risk Management Plan
ROG	reactive organic gas
ROW	right-of-way
RRF	Resource Recovery Facility
RTC	Regional Transportation Commission
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCBRL	Santa Cruz Branch Rail Line
SCCOEH	Santa Cruz County Office of Environmental Health
SCCSD	Santa Cruz County Sanitation District
SCFD	City of Santa Cruz Fire Department
SCPD	Santa Cruz Police Department
SCR911	Santa Cruz Regional 9-1-1
SCS	Sustainable Community Strategy
SCWD	City of Santa Cruz Water Department
SF_6	sulfur hexafluoride
SLF	Sacred Lands File
SLR	San Lorenzo River
SMP	Soils Management Plan
SO_X	sulfur oxides
STB	Surface Transportation Board
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board

TAC	toxic air contaminant
TDS	total dissolved solids
TMDL	Total Maximum Daily Load
TNW	Traditional Navigable Waters
TPH	total petroleum hydrocarbon
UCS	Unified Corridor Investment Study
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
UWMP	Urban Water Management Plan
VdB	vibration decibel
VMT	vehicle miles traveled
VOC	volatile organic compound
WBWG	Western Bat Working Group
WDR	waste discharge requirement
WWTF	wastewater treatment facility

Executive Summary

The City of Santa Cruz (City), in coordination with the County of Santa Cruz (County) and the Santa Cruz County Regional Transportation Commission (RTC), is proposing the **Coastal Rail Trail Segments 8 and 9 Project** (Project) to be developed along the RTC-owned rail corridor that generally parallels the coastline in central Santa Cruz County. The City is serving as the California Environmental Quality Act (CEQA) lead agency.

This document is an Environmental Impact Report (EIR) analyzing the environmental effects of the proposed Coastal Rail Trail Segments 8 and 9 (Project) in compliance with the *CEQA Guidelines*. This section summarizes the characteristics of the Project, alternatives to the Project, and the environmental impacts and mitigation measures associated with the Project.

Project Synopsis

The Project is a 2.2-mile bicycle and pedestrian system proposed to extend along the RTC-owned railroad corridor from the Beach Street/Pacific Avenue roundabout on the west to the eastern side of 17th Avenue on the east, excluding the recently constructed San Lorenzo River (SLR) Trestle Bridge Improvements. Segment 8 (0.6 mile) is composed of improving an existing Class IV on-street bicycle system and pedestrian sidewalk. Segment 9 (1.6 miles) is composed of a new multi-use bicycle and pedestrian trail.

The project purpose is to provide an accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the rail corridor, consistent with the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan.

This EIR includes an evaluation of the City's *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)* for Segment 9, which is part of the Proposed Project and therefore analyzed at an equal level of detail. Segment 8 of the Project would be the same, with or without the optional Interim Trail. The trail alignments are presented in **Appendices A.1** and **A.2**, respectively.

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

In Segment 8, the existing bike way (cycle track) in the roadway would be improved by: installing raised "curb separators" (~3–6 inches high) between the bike lane and vehicle travel lane; retaining or replacing the existing vulcanized rubber divider adjacent to the on-street parking; improving and widening sidewalks; and adding high visibility striping and surface improvements for bike facility, crosswalk, and mixing zone visibility.

In Segment 9, the trail would be constructed on the inland side of the railroad tracks, except for the short portion on the eastern end of the Project where the trail would switch to the coastal side. The typical trail width of the paved trail would be 12 feet with striping in the middle to separate eastbound and westbound. Fencing would be installed between the trail and tracks as necessary in accordance with the MBSST Network Master Plan. This is considered the preferred alignment and approach by the City, County, and RTC.

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

In Segment 8, the improvements would be the same as described above for the Ultimate Trail Configuration.

In Segment 9, all or a portion of the trail would be constructed in approximately the same location of the railroad tracks by removal of the rails and ties. The typical trail width would be 16 feet with striping in the middle to separate eastbound and westbound. Upon completion of this first phase (estimated to be 25 years in duration for purposes of analysis), the trail would be removed, and the Ultimate Trail Configuration would be constructed. Thus, the optional Interim Trail includes three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

TRAIL AMENITIES AND FEATURES

For both the Ultimate Trail Configuration and the optional Interim Trail, fencing and/or guardrails would be installed along the trail alignment for safety and security in accordance with the MBSST Master Plan. Lighting that is "dark sky compliant" would be installed along portions of the trail that do not benefit from existing light sources along adjacent roadways and crossings. Trash receptacles, including recycling receptacles and dog waste stations, would be added near four roadway crossings (Mott, Seabright, 7th, and 17th Avenues). Informational, educational, and directional signage would be placed at strategic locations along the trail.

CONSTRUCTION TIMING

Construction of the Ultimate Trail Configuration, without the optional Interim Trail, is estimated to begin in 2023 or 2024, and would continue for approximately 24 months.

Construction of the optional Interim Trail is estimated to occur as follows. It is estimated that the Interim Trail could be in operation for approximately 25 years, recognizing this is an interim or temporary condition driven by freight activity, and it could be longer or shorter than estimated below for purposes of analysis.

1. Implementation of Interim Trail: 2023–2027 (4 years)
    - 2023–2025 – Complete environmental review, design, and ROW process
    - 2025–2027 – Trail construction
2. Demolition of Interim Trail and Rebuilding the Rail Line: 2056–2060 (4 years)
3. Construction of Ultimate Trail Configuration: 2053–2055 (2 years)

CONSTRUCTION ACTIVITIES

Construction activities for Segment 8 would include improvements to the existing bike way (cycle track), sidewalks, curb ramps, stairs, and driveways.

Construction activities for the new trail in Segment 9 would include excavation of material sources, clearing and grubbing, and tree removal; grading, retaining wall construction, drainage improvements, and placement of crushed aggregate base and paved surface; and revegetation, installation of fencing, signs, lighting, and other trail and safety-related features. There would be drilling associated with construction of the retaining walls and viaducts but no pile driving. Additionally, the optional Interim Trail includes demolition of the existing rail (part 1) and demolition of the Interim Trail (part 2).

Several best management practices (BMPs) are included in the project description and will be identified in the construction bid documents and implemented during project construction to minimize dust, emissions, and erosion and to protect air quality, biological resources, and water quality.

Project Purpose and Objectives

The project **purpose** is to provide an Americans with Disabilities Act (ADA)-accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the existing rail corridor.

The project **objectives** are based on and consistent with objectives and policies in the adopted MBSST Network Master Plan.

The project objectives include the following:

1. Provide a continuous public trail with continuity in design along the Santa Cruz Branch Line railroad corridor and connecting spur trails in Santa Cruz County (Master Plan objective 1.1)
2. Develop the trail so future rail transportation service along the corridor is not precluded (Master Plan policy 1.2.4)
3. Maximize ocean views and scenic coastal vistas along a coastal alignment for experiencing and interpreting the Monterey Bay National Marine Sanctuary (sanctuary), coastal environment, local history, and affected communities (Master Plan policies 1.1.2 and 1.1.4, objective 2.1)
4. Maximize safety and serenity for experiencing and interpreting the sanctuary and landscapes by providing a trail separate from roadway vehicle traffic (Master Plan goal 1)
5. Minimize trail impacts to private lands, including agricultural, residential, and other land uses (Master Plan objective 1.5)
6. Minimize trail impacts to sensitive habitat areas and special-status plant and animal species (Master Plan objective 1.4, policy 1.4.1)
7. Comply with requirements of local, state, and federal agencies with jurisdiction

Project Alternatives

Pursuant to Section 15126.6 of the *CEQA Guidelines*, the City considered several Project alternatives, including design options and features, suggested during the scoping process. The following alternatives are evaluated in this EIR:

- Alternative 1: Trail Only (Chapter 5, *Project Alternatives*)
- Alternative 2: Interim Trail with Rail Preservation (Chapter 5)
- Alternative 3: No Project (Chapter 5)
- Optional First Phase: Interim Trail (Chapter 3, *Environmental Impact Analysis*)

Alternative 1. The Trail Only Alternative would involve permanent removal of the existing railroad tracks and ties, and construction of a multi-use trail on the rail bed. The trail would be 26 feet wide and would separate bicyclists from pedestrians with pavement markings.

Alternative 2. The Interim Trail with Rail Preservation would (1) construct a 16-foot-wide trail composed of fiberglass reinforced polymer (FRP) decking over the existing tracks and ties, (2) later remove the Interim Trail, and (3) construct the Ultimate Trail Configuration alongside the rail. This

provides an alternative that preserves the rail and ties along a rail line which is eligible for listing as a historic resource, compared to the Optional First Phase (Interim Trail) which temporarily removes the rail.

Alternative 3. The No Project Alternative assumes that the Project corridor would remain "as is" with no planned development of a trail for alternative transportation, recreation, or other uses.

Areas of Known Controversy and Key Issues

Some members of the public have expressed preference for a "trail only" project on the SCBRL, whereby rail service would be abandoned, tracks would be removed, and pedestrian and bicycle paths would be located on the rail bed.

Issues to be Resolved

Issues to be resolved include the City's (as well as County and RTC) choice among the Proposed Project, with or without the Optional First Phase (Interim Trail), and Project alternatives, and implementing mitigation measures to reduce the significant impacts to the extent feasible.

Summary of Impacts and Mitigation Measures

Proposed Project

The potential impacts of the Proposed Project (Ultimate Trail Configuration), with and without the Optional First Phase (Interim Trail), were analyzed at an equal level of detail in Chapter 3. The potential cumulative impacts are addressed in Chapter 4, *Other CEQA Required Discussions*.

Table ES-1, located at the end of this Executive Summary, includes a summary of the impacts of the Proposed Project (Ultimate Trail Configuration) and the Optional First Phase (Interim Trail); proposed mitigation measures, if required; and the residual impact after application of mitigation. Impacts are categorized as follows:

- **No Impact.** No adverse effect at all on environmental conditions, and/or a beneficial effect by reducing the severity existing environmental problems or hazards.
- **Less than Significant.** An impact that may be adverse, but does not exceed the identified significance threshold and does not require mitigation measures.
- **Less than Significant with Mitigation.** An impact that may be adverse and exceed the identified significance threshold, but can be reduced to below the significance threshold level with the adoption of identified mitigation measures.
- **Significant and Unavoidable.** An impact that may be adverse and exceed the identified significance threshold, and cannot be reduced to below the threshold level even with the adoption of any identified mitigation measures.

The Proposed Project includes one design option called the East Harbor Connection, where there could be a switchback trail connection down to the East Harbor service road. For most resource topics, the potential environmental impacts would be the same or very similar.

Table ES-2, located at the end of this Executive Summary, provides a summary list of the mitigation measures identified for the Proposed Project and Project Alternatives.

Project Alternatives

The potential impacts of Alternatives 1, 2 and 3 were analyzed at a lesser level of detail, as allowed by CEQA, in Chapter 5.

Table ES-3, located at the end of this Executive Summary, provides a comparative summary of the Project impacts for the Proposed Project and Project Alternatives. Refer to Section 5.2, *Alternatives Evaluated in Draft EIR,* in Chapter 5 for the complete alternatives analysis.

As described above, the Proposed Project has an Optional First Phase (Interim Trail) that is evaluated in Chapter 3 of the Draft EIR, but is also included in the comparison of Project alternatives.

Significant and Unavoidable Impacts

As presented in **Table ES-1** and **Table ES-2**, the Proposed Project (Ultimate Trail Configuration), Optional First Phase (Interim Trail), Alternative 1 (Trail Only), and Alternative 2 (Interim Trail with Rail Preservation) would all result in the following significant and unavoidable Project impacts, as well as cumulative impacts identified in Chapter 4.

- Aesthetics
  - Adverse effect on scenic vistas through the removal of mature trees (Impact AES-1)
  - Inconsistency with policies that pertain to tree and vegetation removal (Impact AES-2)
  - Cumulative aesthetics impacts from increased development in open spaces disrupting scenic vistas from tree removal (AES-C)
- Biological Resources
  - Adverse effect on monarch butterfly and autumnal and/or wintering roost sites from tree removal (BIO-2)
  - Interference with wildlife movement from tree removal and habitat fragmentation (BIO-11)
  - Conflict with policies and ordinances protecting trees (BIO-12)
  - Cumulative biological resources impacts from tree removal and fragmentation of habitat and wildlife corridors (BIO-C)

Additionally, the Optional First Phase (Interim Trail) and Alternative 1 (Trail Only) would result in the following significant and unavoidable impact.

- Cultural Resources
  - Adverse effect on historic resources from removal of the Santa Cruz Branch Rail Line (CR-1)
  - Cumulative impact to historic resources from removal of the Santa Cruz Branch Rail Line (Impact CR-C)

Environmentally Superior Alternative

As described in Section 5.3, *Environmentally Superior Alternative*, and **Table 5-5** in Chapter 5, the impacts of the Proposed Project (Ultimate Trail Configuration) are compared to the Optional First Phase (Interim Trail), Alternative 1 (Trail Only), Alternative 2 (Interim Trail with Rail Preservation), and Alternative 3 (No Project). Based on this comparison, Alternative 3 (No Project) would result in less or substantially less environmental impacts for all the resource topics. Therefore, CEQA requires an environmentally superior build alternative be identified.

As described in Section 5.3, the overall impacts of the build alternatives are similar, and there is no clear environmentally superior alternative. Therefore, the City considered two measures to determine the environmentally superior alternative: 1) minimizing significant and unavoidable impacts and 2) environmentally superior for most resource topics.

Using both measures, the **Proposed Project (Ultimate Trail Configuration)** is considered environmentally superior for the following general reasons. Compared to the Proposed Project (Ultimate Trail Configuration):

- Optional First Phase (Interim Trail) [1] and Alternative 2 (Interim Trail with Rail Preservation) [2] when considered as a whole, as required by CEQA[3], would result in more construction-related impacts because of the two additional construction periods, wider trail (16 feet instead of 12 feet), and more tree removal (404 trees total instead of 381 trees). Optional First Phase (Interim Trail) would result in greater impact than Alternative 2 (Interim Trail with Rail Preservation) because the rail would be removed resulting in a greater impact to a historic resource and resulting in more ground disturbance and demolition.
- Alternative 1 (Trail Only) would result in more impacts associated with ground disturbance from constructing a substantially wider trail (26 feet instead of 12 feet). Further, the wider trail extends south of the rail line, resulting in more impacts to biological resources including trees, sensitive habitats, and protected resources along Twin Lakes State Park; potential monarch roost habitat between the San Lorenzo River and Mountain View Avenue; and where eucalyptus support rookeries for great blue heron, egret, cormorants, and other nesting birds east of the Santa Cruz Harbor.
- Optional First Phase (Interim Trail) and Alternative 1 (Trail Only) would result in greater impacts to cultural resources from temporary removal and permanent removal, respectively, of the rail and ties. The rail line is considered a historic resource eligible for listing on the California Register of Historical Resources CRHR and National Register of Historic Places[4].

The following comparisons are provided for additional information.

- When comparing the Proposed Project (Ultimate Trail Configuration) with only Part 1 of the Interim Trail, without implementation of Part 2 (no removal of the Interim Trail) and Part 3 (no construction of the Ultimate Trail Configuration), Part 1 alone would be environmentally superior because there would be one construction period and less overall tree removal (124 trees instead of 380 trees). However, Part 1 would still result in a significant and unavoidable impact to aesthetics and biological resources because it is removing 25% of the existing trees along the rail corridor.
- When comparing the Optional First Phase (Interim Trail) and Alternative 2 (Interim Trail with Rail Preservation), Alternative 2 is considered environmentally superior because it would not likely result in significant and unavoidable impacts to cultural resources from removal of the rail line.

[1] The Optional First Phase (Interim Trail) is composed of three parts: (1) removal of the rail and construction of the Interim Trail on the rail line, (2) demolition of the Interim Trail and rebuilding the rail line, and (3) construction of the Ultimate Trail Configuration alongside the rail.

[2] Alternative 2 (Interim Trail with Rail Preservation) is composed of three parts: (1) construction of the FRP decking over the existing tracks and ties, (2) removal of the Interim Trail, and (3) construct the Ultimate Trail Configuration alongside the rail.

[3] *CEQA Guidelines* (Sec 15126) requires all phases or the whole of a project be considered when evaluating environmental impacts.

[4] The Santa Cruz Branch Rail Line was recorded on California Department of Parks and Recreation 523 Series forms and evaluated for inclusion in the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP). The California Department of Transportation Cultural Studies Office has assumed that the entire resource is eligible for the NRHP for its associations with the history of transportation and economic development in the City and County of Santa Cruz. It is therefore a historical resource for the purposes of the California Environmental Quality Act (CEQA).

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
Aesthetics			
AES-1. The Project would have an adverse effect on scenic resources and vistas through the removal of mature trees.	Significant and Unavoidable	None Available	Significant and Unavoidable
AES-2. The Project would be inconsistent with policies that pertain to tree and vegetation removal.	Significant and Unavoidable	None Available	Significant and Unavoidable
AES-3. The Project would not adversely affect daytime or nighttime views.	Less than Significant	None Required	Less than Significant
AES-C. Cumulative development may result in significant cumulative aesthetic impacts. The Project's contribution would not be cumulatively considerable, except for cumulative impacts to scenic quality due to the removal of mature trees.	Cumulatively Considerable	BIO-C	Cumulatively Considerable
Beneficial Effects: The Project would facilitate public access to viewing points of scenic vistas in both segments of the Project corridor.			
Air Quality			
AIR-1. The Project would not conflict with or obstruct implementation of the adopted MBARD AQMP.	Less than Significant	None Required	Less than Significant
AIR-2. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is designated non-attainment.	Less than Significant	None Required	Less than Significant
AIR-3. The Project would not expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	None Required	Less than Significant
AIR-4. The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less than Significant	None Required	Less than Significant
AIR-C. Cumulative development may result in significant air quality impacts. The Project's contribution would not be cumulative considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Beneficial Effect: The Project would provide an alternative transportation corridor for bicyclists, pedestrians, and other users, which is expected to reduce vehicular travel and associated emissions.			
Biological Resources			
BIO-1. The Project could adversely affect State Endangered and Federally Threatened Santa Cruz tarplant.	Potentially Significant	BIO-1a,b BIO-9a,b,c	Less than Significant with Mitigation
BIO-2. The Project could adversely affect monarch butterfly and autumnal and/or wintering roost sites.	Potentially Significant	BIO-2 BIO-9a,b,c	Significant and Unavoidable

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
BIO-3. The Project could adversely affect sensitive fish species (tidewater goby, central California coast coho salmon, and central California coast steelhead), critical habitat, and coho Essential Fish Habitat (EFH).	Potentially Significant	BIO-2 BIO-9a,b,c BIO-10a,b	Less than Significant with Mitigation
BIO-4. The Project could adversely affect western pond turtle and Santa Cruz black salamander, if present.	Potentially Significant	BIO-2 BIO-9a,b,c BIO-10a,b	Less than Significant with Mitigation
BIO-5. The Project would adversely affect sensitive and native nesting bird species during construction and operation.	Potentially Significant	BIO-2 BIO-5 BIO-9a,b,c	Less than Significant with Mitigation
BIO-6. Project construction could adversely affect sensitive and common roosting bat species that may use coast live oak woodland and other trees along the alignment.	Potentially Significant	BIO-2 BIO-6 BIO-9a,c	Less than Significant with Mitigation
BIO-7. The Project would adversely affect San Francisco Dusky-footed woodrat.	Potentially Significant	BIO-2 BIO-7 BIO-9a,c	Less than Significant with Mitigation
BIO-8. The Project could adversely affect marine mammals, including southern sea otter.	Potentially Significant	BIO-2 BIO-9a,c BIO-10b	Less than Significant with Mitigation
BIO-9. The Project would result in adverse effects to riparian habitat, other sensitive natural communities, and Coastal Act ESHA.	Potentially Significant	BIO-9a,b,c	Less than Significant with Mitigation
BIO-10. The Project would result in adverse effects to palustrine emergent wetlands and aquatic/riverine habitats.	Potentially Significant	BIO-9a,b,c BIO-10a,b	Less than Significant with Mitigation
BIO-11. The Project would interfere with wildlife movement.	Potentially Significant	BIO-2 BIO-9a,b,c BIO-10a,b	Significant and Unavoidable
BIO-12. The Project would conflict with policies and ordinances protecting trees, including the City of Santa Cruz Heritage Tree Ordinance and County of Santa Cruz Significant Tree Ordinance.	Potentially Significant	BIO-9a,b,c	Significant and Unavoidable
BIO-C. Cumulative development would result in significant cumulative biological resources impacts. The Project's contribution would be cumulatively considerable.	Cumulatively Considerable	BIO-C	Cumulatively Considerable

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
Cultural Resources			
CR-1. The Project may adversely affect historical resources, including the Santa Cruz Branch Rail Line.			
Ultimate Trail Configuration	Potentially Significant	CR-1a	Less than Significant
Optional Interim Trail	Potentially Significant	CR-1a, CR-1b	Significant and Unavoidable
CR-2. Ground-disturbing activities during project construction may unearth or adversely impact subsurface archaeological resources.	Potentially Significant	CR-2	Less than Significant
CR-3. Ground-disturbing activities during project construction may disturb human remains.	Less than significant	None Required	Less than Significant
CR-C. Cumulative development may result in significant cumulative cultural resource impacts. The Project's contribution would not be cumulatively considerable, except for cumulative impacts to the historic Santa Cruz Branch Rail Line that result from Rail Removal (Optional Interim Trail Only).	Cumulatively Considerable	CR-1a CR-1b	Cumulatively Considerable
Geology and Soils			
GEO-1. The Project would not exacerbate the existing exposure of people or structures to risks from strong seismic ground shaking.	Less than Significant	None Required	Less than Significant
GEO-2. The Project may exacerbate exposure of the public to liquefaction or landslide hazards and may be located on a geological unit or soil that would become unstable as a result of lateral spreading, landslides, and liquefaction.	Less than Significant	None Required	Less than Significant
GEO-3. The Project may result in substantial soil erosion or loss of topsoil.	Less than Significant	None Required	Less than Significant
GEO-4. The Project would not exacerbate the existing risk to life or property resulting from expansive soils.	Less than Significant	None Required	Less than Significant
GEO-5. Ground-disturbing activities during Project construction may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially Significant	GEO-5	Less than Significant
GEO-C. Cumulative development would not result in significant cumulative geology and soils impacts. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
Greenhouse Gas Emissions/Climate Change			
GHG-1. The Project would not result in GHG emissions that would have a significant impact on the environment.	Less than Significant	None Required	Less than Significant
GHG-2. The Project would be consistent with applicable GHG reduction plans.	Less than Significant	None Required	Less than Significant
GHG-3. The Project would not expose people or structures to substantial risk of loss, injury, or death from projected sea level rise or flooding.	Less than Significant	None Required	Less than Significant
GHG-C. Cumulative statewide development would result in a significant cumulative GHG impact. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Beneficial Effect: The Project would provide an alternative transportation corridor for bicyclists, pedestrians, and other users, which is expected to reduce vehicular travel and associated emissions.			
Hazards and Hazardous Materials			
HAZ-1. Construction of the Project would involve use, disposal, or transportation of hazardous materials, which could be accidentally released.	Less than Significant	None Required	Less than Significant
HAZ-2. Ground disturbance during construction could release soil contaminants.			
Ultimate Trail Configuration	Potentially Significant	HAZ-2a, HAZ-2b	Less than Significant
Optional Interim Trail	Potentially Significant	HAZ-2a, HAZ-2b, HAZ-2c	Less than Significant
HAZ-C. Cumulative development would not result in significant cumulative hazards and hazardous materials impacts. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Hydrology and Water Quality			
HYD-1. The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality nor conflict with water quality control plan.	Less than Significant	None Required	Less than Significant
HYD-2. The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.	Less than Significant	None Required	Less than Significant
HYD-3. The Project would not substantially alter drainage patterns in the Project corridor or vicinity.	Less than Significant	None Required	Less than Significant

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
HYD-4. The Project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	Less than Significant	None Required	Less than Significant
HYD-C. Cumulative development would not result in significant cumulative hydrology and water quality impacts. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Land Use and Planning			
LUP-1. The Project would not physically divide an established community.	Less than Significant	None required	Less than Significant
LUP-2. The Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
LUP-C. Cumulative development would not result in significant cumulative land use impacts. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Beneficial Effect. The Project would increase connectivity across established communities by providing a pedestrian and bicycle trail using an existing corridor without disturbing existing residential, commercial, and industrial uses along the Project corridor.			
Noise			
N-1. Construction may result in a substantial temporary increase in noise levels.	Potentially Significant	N-1	Less than Significant
N-2. Operation of the Project would not expose persons to or generate excessive noise levels.	Less than Significant	None required	Less than Significant
N-3. Construction would potentially expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Potentially Significant	N-3	Less than Significant
N-C. Cumulative development may result in significant cumulative noise impacts to ambient vehicle noise. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
Public Safety and Services			
PUB-1. The Project would not result in the need for additional fire protection facilities or emergency medical services response to maintain acceptable service ratios or response times.	Less than Significant	None Required	Less than Significant
PUB-2. The Project would not result in the need for additional police protection or law enforcement facilities to maintain acceptable service ratios or response times.	Less than Significant	None Required	Less than Significant
PUB-3. The Project would not result in the need for the construction of new or additional park facilities, nor the degradation of existing facilities.	Less than Significant	None Required	Less than Significant
PUB-4. The Project would not result in the need for the construction of new or additional health service facilities.	Less than Significant	None Required	Less than Significant
PUB-C. Cumulative development could result in significant cumulative impacts to public safety and services. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Beneficial Effect: The Project itself would provide a new transportation and recreational facility and would improve access to Twin Lakes State Beach park facilities and other parks and recreation facilities, such as the Santa Cruz Harbor, Simpkins Swim Center, and Santa Cruz Boardwalk. Additionally, the Project would improve access to the rail line for police, fire, and emergency response medical services.			
Transportation			
T-1. The Project would meet the screening criteria set by OPR, Caltrans, City of Santa Cruz, and Santa Cruz County and thus would not conflict or be inconsistent with *CEQA Guidelines*, Section 15064.3(b).	Less than Significant	None Required	Less than Significant
T-2. Neither construction nor operation of the Project would substantially increase hazards due to a geometric design feature or incompatible use.	Less than Significant	None Required	Less than Significant
T-C. Cumulatively development would result in significant cumulative traffic impacts. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Beneficial Effect: The Project would provide the option for alternative transportation modes along the Project corridor, resulting in an overall reduction in VMT that would ultimately improve the existing circulation system. Furthermore, the Project would implement high visibility striping and surface improvements along Segment 8, reducing user conflicts along Beach Street where existing pedestrian, bicycle, and vehicular traffic is heavily congested.			

Table ES-1 Summary of Project Impacts[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
Tribal Cultural Resources			
TCR-1. The Project may cause a substantial adverse change in the significance of a tribal cultural resource.	Potentially Significant	TCR-1a, TCR-1b	Less than Significant
TCR-C. Cumulative development may result in significant cumulative tribal cultural resource impacts. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable
Utilities and Service Systems			
UTIL-1. Sufficient water supplies are available to serve the Project, and the Project would not result in the relocation or construction of new or expanded water facilities.	Less than Significant	None Required	Less than Significant
UTIL-2. The Project would not generate wastewater in excess of existing treatment capacity and would not require or result in the relocation or construction of new or expanded wastewater treatment facilities.	Less than Significant	None Required	Less than Significant
UTIL-3. The Project would not require or result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities.	Less than Significant	None Required	Less than Significant
UTIL-4. The Project would not generate solid waste in excess of local landfill capacity.	Less than Significant	None Required	Less than Significant
UTIL-C. Cumulative development may result in significant cumulative impacts to utilities and service systems. The Project's contribution would not be cumulatively considerable.	Not Cumulatively Considerable	None Required	Not Cumulatively Considerable

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

Table ES-2 Summary of Mitigation Measures Identified for Proposed Project and Project Alternatives

Mitigation Measure	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)	Alternative 3 (No Project)
Note: Most of the mitigation measures are required for the Proposed Project, with or without the optional Interim Trail, and Alternatives 1 and 2. The shaded rows indicate for which impacts the mitigation requirements are different.					
BIO-1a. Implement Protections for the Santa Cruz tarplant population in Twin Lakes State Park.	Yes	Yes	Yes	Yes	No
BIO-1b. Install Permanent Fencing between Interim Trail and Twin Lakes State Beach near Santa Cruz Tarplant Habitat (Interim Trail only).	Yes	Yes	Yes	Yes	No
BIO-2. Conduct Biological Monitoring for Sensitive Wildlife Species.	Yes	Yes	Yes	Yes	No
BIO-5. Conduct Breeding Bird Surveys and Identify Protective Buffers prior to Construction, if Construction occurs between February 1 and August 31.	Yes	Yes	Yes	Yes	No
BIO-6. Conduct Bat Surveys and Implement Measures to Protect Roosting Bats during Construction.	Yes	Yes	Yes	Yes	No
BIO-9a. Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing.	Yes	Yes	Yes	Yes	No
BIO-9b. Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation.	Yes	Yes	Yes	Yes	No
BIO-9c. Implement Best Management Practices to Protect Biological Resources during Construction.	Yes	Yes	Yes	Yes	No
BIO-10a. Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats.	Yes	Yes	Yes	Yes	No
BIO-10b. Develop and Implement Aquatic Resources Mitigation and Monitoring Plan.	Yes	Yes	Yes	Yes	No
BIO-C. Include cumulative conservation goals and objectives in the Project-Specific Biological Resources Mitigation and Management Plan (Mitigation Measure BIO-9b)	Yes	Yes	Yes	Yes	No
CR-1a. Install historical interpretive exhibits along trail prior to trail use.	Yes	Yes	Yes	Yes	No
CR-1b. Prepare historic documentation package prior to rail removal (Interim Trail only).	No	Yes	Yes	No	No
CR-2. Implement protocol for unanticipated discovery of cultural resources.	Yes	Yes	Yes	Yes	No

Table ES-2 Summary of Mitigation Measures Identified for Proposed Project and Project Alternatives

Mitigation Measure	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)	Alternative 3 (No Project)
GEO-5. Implement paleontological resources protection measures during construction in high sensitivity areas.	Yes	Yes	Yes	Yes	No
HAZ-2a. Conduct soil sampling and implement necessary remediations.	Yes	Yes	Yes	Yes	No
HAZ-2b. Prepare and implement Soils Management Plan.	Yes	Yes	Yes	Yes	No
HAZ-2c. Evaluate subgrade soil and cap contaminated soils and ballast prior to rail and trail demolition (Interim Trail only Parts 1 and 2 only).	No	Yes	Yes	No	No
N-1. Implement noise-reducing measures for construction equipment used within 550 feet of residences or hotels.	Yes	Yes	Yes	Yes	No
N-3. Provide notification of construction vibration to residential units within 50 feet.	Yes	Yes	Yes	Yes	No
TCR-1a. Conduct Native American monitoring during construction.	Yes	Yes	Yes	Yes	No
TCR-1b. Implement protocol for unanticipated discovery of tribal cultural resources, if Native American monitor is not present.	Yes	Yes	Yes	Yes	No

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Aesthetics					
AES-1. The Project would have an adverse effect on scenic vistas through the removal of mature trees.	SU	SU Substantially similar	SU Similar	NI Substantially less	SU Substantially similar
AES-2. The Project would be inconsistent with policies that pertain to tree and vegetation removal.	SU	SU Substantially similar	SU Substantially Similar	NI Substantially less	SU Substantially similar
AES-3. The Project would not adversely affect daytime or nighttime views.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
Overall Impact Determination[b]	*SU*	*SU*	*SU*	*NI*	*SU*
Air Quality					
AIR-1. The Project would not conflict with or obstruct implementation of the adopted MBARD AQMP.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Slightly more[d]	LTS Substantially similar
AIR-2. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is designated non-attainment.	LTS	LTS Similar, more from construction	LTS Similar, slightly more from construction	LTS Less from construction Slightly more for operation[d]	LTS Similar, slightly less from construction
AIR-3. The Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	LTS Similar, more from construction	LTS Similar, slightly more from construction	NI Less	LTS Similar, slightly less from construction
AIR-4. The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	LTS Similar, slightly more from construction	LTS Similar	NI Less	LTS Similar, slightly less from construction
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Biological Resources					
BIO-1. The Project could adversely affect State Endangered and Federally Threatened Santa Cruz tarplant.	LTSM BIO-1a, 1b BIO-9a,b,c	LTSM Similar, slightly more BIO-1a,b BIO-9a,b,c	LTSM Similar, more BIO-1a,b BIO-9a,b,c	NI Substantially less	LTSM Substantially similar BIO-1a,b BIO-9a,b,c
BIO-2. The Project could adversely affect monarch butterfly and autumnal and/or wintering roost sites.	SU BIO-2 BIO-9a,b,c	SU Similar, more BIO-2 BIO-9a,b,c	SU Similar, more BIO-2 BIO-9a,b,c	NI Less	SU Substantially similar BIO-2 BIO-9a,b,c
BIO-3. The Project could adversely affect sensitive fish species (tidewater goby, central California coast coho salmon, and central California coast steelhead), critical habitat, and coho Essential Fish Habitat (EFH).	LTSM BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	NI Less	LTSM Similar, slightly less BIO-2 BIO-9a,b,c BIO-10a,b
BIO-4. The Project could adversely affect western pond turtle and Santa Cruz black salamander, if present.	LTSM BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	NI Less	LTSM Similar, slightly less BIO-2 BIO-9a,b,c BIO-10a,b
BIO-5. The Project would adversely affect sensitive and native nesting bird species during construction and operation.	LTSM BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b	NI Less	LTSM Substantially similar BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
BIO-6. Project construction could adversely affect sensitive and common roosting bat species that may use coast live oak woodland and other trees along the alignment.	LTSM BIO-2 BIO-6 BIO-9c	LTSM Similar, more BIO-2 BIO-6 BIO-9c	LTSM Similar, more BIO-2 BIO-6 BIO-9c	NI Less	LTSM Substantially similar BIO-2 BIO-6 BIO-9c
BIO-7. The Project would adversely affect San Francisco Dusky-footed woodrat.	LTSM BIO-2 BIO-7 BIO-9a,c	LTSM Similar, more BIO-2 BIO-7 BIO-9a,c	LTSM Similar, more BIO-2 BIO-7 BIO-9a,c	NI Less	LTSM Substantially similar BIO-2 BIO-7 BIO-9a,c
BIO-8. The Project could adversely affect marine mammals, including southern sea otter.	LTSM BIO-2 BIO-9a,c	LTSM Similar BIO-2 BIO-9a,c	LTSM Similar BIO-2 BIO-9a,c	NI Less	LTSM Substantially similar BIO-2 BIO-9a,c
BIO-9. The Project would result in adverse effects to riparian habitat, other sensitive natural communities, and Coastal Act ESHA.	LTSM BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-9a,b,c BIO-10a,b	NI Less	LTSM Substantially similar BIO-9a,b,c BIO-10a,b
BIO-10. The Project would result in adverse effects to palustrine emergent wetlands and aquatic/riverine habitats.	LTSM BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-9a,b,c BIO-10a,b	NI Less	LTSM Similar, slightly less BIO-9a,b,c BIO-10a,b
BIO-11. The Project would interfere with wildlife movement.	SU BIO-2 BIO-9a,b,c BIO-10a,b	SU Similar, moreBIO-2 BIO-9a,b,c BIO-10a,b	SU Similar, more BIO-2 BIO-9a,b,c BIO-10a,b	NI Less	SU Substantially similar BIO-2 BIO-9a,b,c BIO-10a,b

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
BIO-12. The Project would result in the removal of trees comprising the Santa Cruz urban forest and subject to the City of Santa Cruz Heritage Tree Ordinance and County of Santa Cruz Significant Tree Ordinance.	SU BIO-9a,b,c	SU Similar, more BIO-9a,b,c	SU Similar, more BIO-9a,b,c	NI Less	SU Substantially similar BIO-9a,b,c
Overall Impact Determination[b]	*SU*	*SU*	*SU*	*NI*	*SU*
Cultural Resources					
CR-1. The Project may adversely affect historical resources, including the Santa Cruz Branch Rail Line.	LTSM MM CR-1a	SU Substantially more MM CR-1a MM CR-1b	SU Substantially more MM CR-1a MM CR-1b	NI Substantially less	LTSM Substantially less MM CR-1a MM CR-1b
CR-2. Ground-disturbing activities during project construction may unearth or adversely impact subsurface archaeological resources.	LTSM MM CR-2	LTSM Similar, more MM CR-2	LTSM Similar, slightly more MM CR-2	NI Substantially less	LTSM Similar, slightly less MM CR-2
CR-3. Ground-disturbing activities during project construction may disturb human remains.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Similar, slightly less
Overall Impact Determination[b]	*LTSM*	*SU*	*SU*	*NI*	*LTSM*
Geology and Soils					
GEO-1. The Project would not exacerbate the existing exposure of people or structures to risks from strong seismic ground shaking.	LTS	LTS Substantially similar	LTS Substantially similar	NI Substantially less	LTS Substantially similar
GEO-2. The Project may exacerbate exposure of the public to liquefaction or landslide hazards and may be located on a geological unit or soil that would become unstable as a result of lateral spreading, landslides, and liquefaction.	LTS	LTS Substantially similar	LTS Substantially similar	NI Substantially less	LTS Substantially similar

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
GEO-3. The Project may result in substantial soil erosion or loss of topsoil.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Similar, less
GEO-4. The Project would not exacerbate the existing risk to life or property resulting from expansive soils.	LTS	LTS Substantially similar	LTS Substantially similar	NI Substantially less	LTS Similar, more
GEO-5. Ground-disturbing activities during Project construction may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LTSM MM GEO-5	LTSM Similar, more MM GEO-5	LTSM Similar, slightly more MM GEO-5	NI Substantially less	LTS Similar, less MM GEO-5
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*
Greenhouse Gas Emissions/Climate Change					
GHG-1. The Project would not result in GHG emissions that would have a significant impact on the environment.	LTS	LTS Similar, more	LTSM Similar, slightly more	NI Substantially less	LTS Similar, slightly less
GHG-2. The Project would be consistent with applicable GHG reduction plans.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Slightly more[d]	LTS Substantially similar
GHG-3. The Project would not expose people or structures to substantial risk of loss, injury, or death from projected sea level rise or flooding.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Hazards and Hazardous Materials					
HAZ-1. Construction of the Project would involve use, disposal, or transportation of hazardous materials, which could be accidentally released.	LTS	LTS Similar, more	LTS Similar, more	NI Substantially less	LTS Similar, less

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
HAZ-2. Ground disturbance during construction could release soil contaminants.	LTSM MM HAZ-2a MM HAZ-2b	LTSM Substantially more MM HAZ-2a MM HAZ-2b MM HAZ-2c	LTSM Substantially more MM HAZ-2a MM HAZ-2b MM HAZ-2c	NI Substantially less	LTSM Substantially less MM HAZ-2a MM HAZ-2b
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*
Hydrology and Water Quality					
HYD-1. The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Similar, slightly less
HYD-2. The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.	LTS	LTS Similar, slightly more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
HYD-3. The Project would not substantially alter drainage patterns in the Project corridor or vicinity.	LTS	LTS Similar, slightly more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
HYD-4. The Project would not in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*NI*	*LTS*
Land Use and Planning					
LUP-1. The Project would not physically divide an established community.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Similar, slightly more	LTS Substantially similar

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
LUP-2. The Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	LTS Similar	LTS Similar, more	LTS Similar	LTS Similar, slightly less
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Noise					
N-1. Construction may result in a substantial temporary increase in noise levels.	LTSM MM N-1	LTSM Similar, more MM N-1	LTSM Similar, slightly more MM N-1	NI Substantially less	LTSM Similar, less MM N-1
N-2. Operation of the Project would not expose persons to or generate excessive noise levels.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Similar, less
N-3. Construction would potentially expose persons to or generate excessive groundborne vibration or groundborne noise levels.	LTSM MM N-3	LTSM Similar, more MM N-3	LTSM Similar, slightly more MM N-3	NI Substantially less	LTSM Similar, less MM N-3
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*
Public Safety and Services					
PUB-1. The Project would not result in the need for additional fire protection facilities or emergency medical services response to maintain acceptable service ratios or response times.	LTS	LTS Substantially similar	LTS Substantially similar, slightly less	LTS Less for increased service calls More since no improved access to rail corridor	LTS Substantially similar
PUB-2. The Project would not result in the need for additional police protection or law enforcement facilities to maintain acceptable service ratios or response times.	LTS	LTS Substantially similar	LTS Substantially similar, slightly less	NI Less	LTS Substantially similar

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
PUB-3. The Project would not result in the need for the construction of new or additional park facilities, nor the degradation of existing facilities.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
PUB-4. The Project would not result in the need for the construction of new or additional health service facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Transportation					
T-1. The Project would meet the screening criteria set by OPR, Caltrans, City of Santa Cruz, and Santa Cruz County and thus would not conflict or be inconsistent with *CEQA Guidelines*, Section 15064.3(b).	LTS	LTS Similar, more	LTS Similar, slightly more	LTS Less for construction traffic More because no reduced VMT	LTS Substantially similar
T-2. Neither construction nor operation of the Project would substantially increase hazards due to a geometric design feature or incompatible use.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Tribal Cultural Resources					
TCR-1. The Project may cause a substantial adverse change in the significance of a tribal cultural resource.	LTSM MM TCR-1a MM TCR-1b	LTSM Similar, more MM TCR-1a MM TCR-1b	LTSM Similar, slightly more MM TCR-1a MM TCR-1b	NI Substantially less	LTSM Similar, less MM TCR-1a MM TCR-1b
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Utilities and Service Systems					
UTIL-1. Sufficient water supplies are available to serve the Project, and the Project would not result in the relocation or construction of new or expanded water facilities.	LTS	LTS Similar, slightly more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
UTIL-2. The Project would not generate wastewater in excess of existing treatment capacity, and would not require or result in the relocation or construction of new or expanded wastewater treatment facilities.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
UTIL-3. The Project would not require or result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities.	LTS	LTS Similar, more power	LTS Similar, slightly more power	NI Less	LTS Substantially similar
UTIL-4. The Project would not generate solid waste in excess of local landfill capacity.	LTS	LTS Substantially more	LTS More	NI Substantially less	LTS Similar, slightly less
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*NI*	*LTS*

Table ES-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)

[a] The impacts of the Proposed Project are presented in the first column with the impact determination for the *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration*) presented in the second column, using the abbreviations identified below. The impacts and required mitigation for the *Optional First Phrase: Trail on the Rail Line (Interim Trail)*[3] and the anticipated impacts and mitigation of Alternative 1 (Trail Only) and Alternative 3 (No Project) are presented and described in comparison to the *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented primarily in the text discussion. However, the impacts and required mitigation for Alternative 2 (Interim Trail with Rail Preservation) are presented and compared to the Proposed Project's *Optional First Phrase: Trail on the Rail Line (Interim Trail),* because Alternative 2 was developed to reduce significant impacts of the optional Interim Trail (removal of a historic resource) that would not occur with *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)*. A summary of the required mitigation is presented in **Table 5-4**.

[b] The "Overall Impact Determination" for the resource topic is based on the highest or "worst" level of impact for the resource topic.

[c] The impact determinations are for the whole of the optional Interim Trail, including implementation of all three parts: (1) removal of the rail and construction of the Interim Trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail. This results in three separate construction periods

[d] The No Project alternative was determined to have more operational impact than the Proposed Project, because the Proposed Project would provide alternative transportation for bicycles and pedestrians, which is anticipated to reduce vehicular use and associated emissions, which is the goal in several planning documents including: California Air Resources Board Scoping Plan, Monterey Bay Air Resources District Air Quality Management Plan, Association of Monterey Bay Area Government Metropolitan Transportation Plan and Sustainable Communities Strategy, City Climate Action Plan, County Climate Action Strategy.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

1 Introduction

This document is a project-specific environmental impact report (EIR) for the **Coastal Rail Trail Segments 8 and 9 Project** (Project), located in both the City of Santa Cruz (City) and unincorporated Santa Cruz County (County), proposed by the City in coordination with the County and the Santa Cruz County Regional Transportation Commission (RTC).

The Project is a 2.2-mile bicycle and pedestrian system proposed to extend along the RTC-owned railroad corridor from the Beach Street/Pacific Avenue roundabout on the west to the eastern side of 17th Avenue on the east, excluding the recently constructed San Lorenzo River Trestle Bridge Improvements (**Figure 1-1**). Segment 8 (0.6 mile) is composed of a Class IV on-street bicycle system and pedestrian sidewalk improvements. Segment 9 (1.6 miles) is composed of a multi-use bicycle and pedestrian trail.

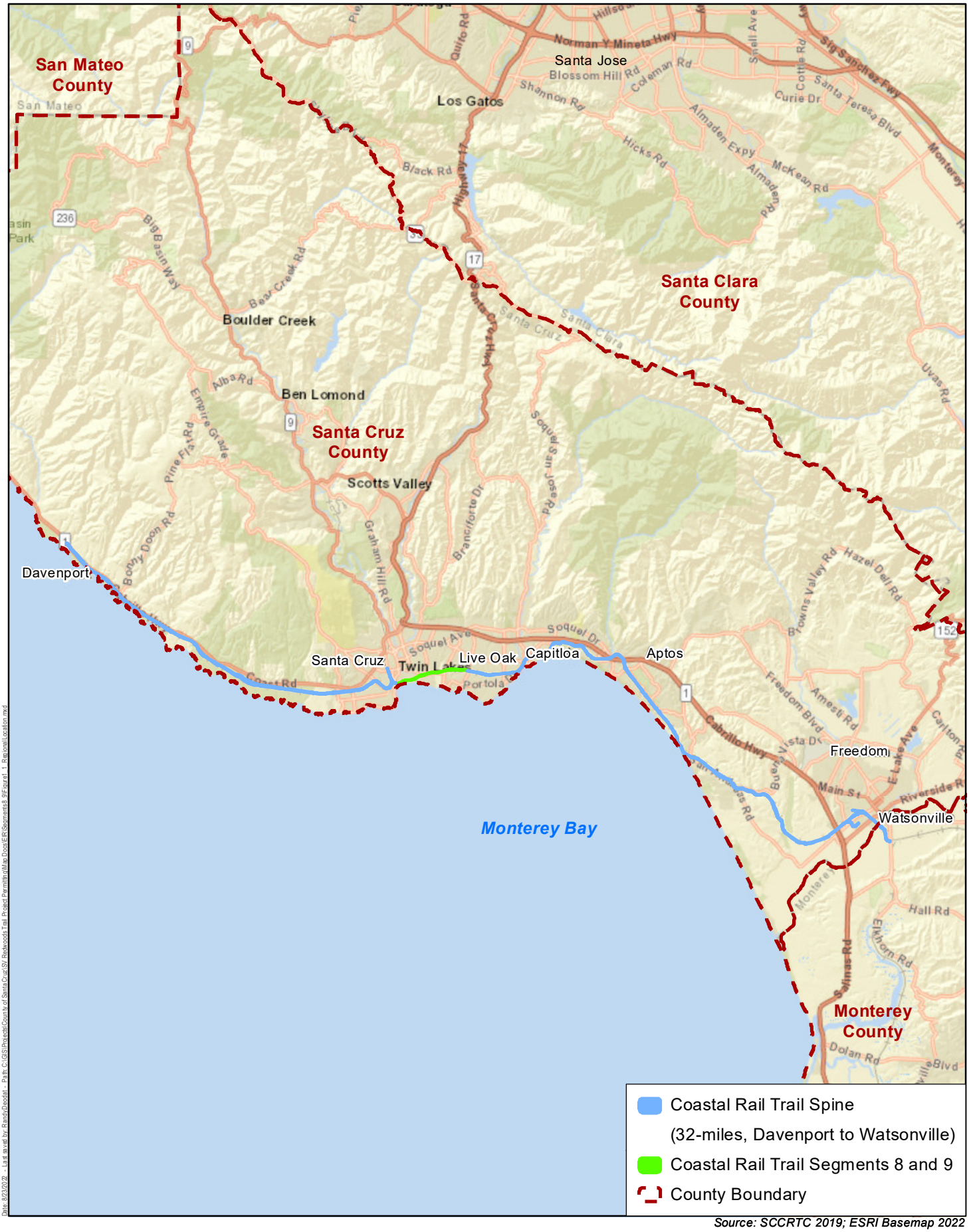
The project purpose is to provide an accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the rail corridor, consistent with the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan.

This EIR includes an evaluation of the City's *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)* for Segment 9, which is part of the Project and therefore analyzed at an equal level of detail. Segment 8 of the Project would be the same, with or without the optional Interim Trail. The trail alignments are presented in **Appendices A.1 and A.2**, respectively.

- **Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)**. In Segment 9, the trail would be constructed on the inland side of the existing railroad tracks, except for the short portion on the eastern end of the Project where the trail would switch to the coastal side. Fencing would be installed between the trail and tracks in accordance with the MBSST Network Master Plan. This alignment is considered the preferred alignment by the City, County and RTC.
- **Optional First Phase: Trail on the Rail line (Interim Trail)**. All or a portion of the trail in Segment 9 would be constructed in approximately the same location of the railroad tracks by removal of the rails and ties. Upon completion of this first phase, the Interim Trail would be removed and the rail reinstated, and the Ultimate Trail Configuration would be constructed.

This EIR chapter includes discussion of the following topics:

1. EIR Purpose and City Legal Authority
2. Project Background
3. California Environmental Quality Act (CEQA) Environmental Review Process
4. EIR Scope and Content
5. EIR Organization
6. Public Outreach



Source: SCCRTC 2019; ESRI Basemap 2022

Harris & Associates

N

0 2 4

Miles

Figure 1-1

Regional Location

Coastal Rail Trail Segments 8 and 9

1.1 EIR Purpose and City Legal Authority

In order to implement the Project, discretionary approval by the City, as well as the County and RTC, is required. This renders the Project subject to the requirements of CEQA. The City is the CEQA lead agency, and the County and RTC are responsible agencies. Refer to Section 1.3.1, *Lead, Responsible, and Trustee Agencies*.

In accordance with Section 15121 of the *CEQA Guidelines* (Title 14 CCR Section 15000 et seq.), the purpose of an EIR is to serve as an informational document that "will inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project."

This EIR serves as an informational document for the public, responsible agencies, and the City decision-makers. The decision-makers will review and consider the information in the EIR, along with any other relevant information, in making final decisions regarding the Project.

1.2 Project Background

1.2.1 Project Inception and Rail Purchase

The Project is part of the MBSST Network, a two-county (Santa Cruz and Monterey Counties) bicycle and pedestrian transportation facility to promote appreciation for the Monterey Bay National Marine Sanctuary.

In its entirety, the planned trail network would extend the length of coastal Santa Cruz County, from the San Mateo County line on the north to the Monterey County line on the south. The Transportation Agency for Monterey County will be responsible for the portion in Monterey County, while the RTC is responsible for the Santa Cruz County portion in partnership with numerous local government entities. This Project only addresses a central portion of the facility within the City of Santa Cruz and unincorporated Santa Cruz County.

In 2012, the RTC purchased the Santa Cruz Branch Rail Line (SCBRL), a 32-mile-long federally regulated freight railroad line between Davenport on the north and Pajaro on the south, from Union Pacific Railroad. Acquisition of the SCBRL was funded primarily by Proposition 116 and other transit funds from the California Transportation Commission. Proposition 116 funding was approved by the California Transportation Commission with the conditions that freight rail service continue as long as required by the federal Surface Transportation Board (STB) and the institution of recreational passenger rail service.

In November 2013, the RTC adopted the MBSST Network Master Plan and certified a programmatic EIR. The RTC made minor revisions to the Master Plan and EIR in February 2014.

The MBSST Network Master Plan identified the 32-mile Coastal Rail Trail located along the SCBRL as the spine of the 50-mile MBSST Network. The MBSST Network in its entirety includes the 32-mile Coastal Rail Trail and 18 miles of spur trails. The MBSST Network will connect to existing and planned trails in Santa Cruz County and Monterey County.

The SCBRL Line serves as the "Coastal Rail Trail spine" of the Santa Cruz County portion of the MBSST Network (**Figure 1-1**).

1.2.2 Rail Operation and Maintenance

Although the RTC owns the SCBRL right-of-way (ROW), the RTC does not own the freight rail operation rights. The RTC has an Administration, Coordination, and License Agreement with a rail operator that owns a freight easement over all the tracks and is designated as the common carrier by the federal STB, which is the federal agency with regulatory jurisdiction over the interstate freight railroad network.

The freight easement extends 10 feet on either side of the centerline of the tracks and includes rights of access along the length of the easement. As stated in the deed for the freight easement, the easement is for purposes of conducting freight rail operations and fulfilling rights and obligations as a common carrier freight railroad under applicable federal laws and regulations.

Currently, freight service is only provided south of Lee Road in the City of Watsonville. Repairs to the rail line are needed prior to re-initiating freight operations north of Lee Road, including the Project area. The cost of rail repairs exceeds RTC's available revenues at this time.

RTC's rail line maintenance includes but is not limited to vegetation control, ditch grading, culvert clearing, and slope repair. RTC's Agreement with the common carrier transfers maintenance within the freight easement to the common carrier once initial repairs are completed by the RTC. The RTC is currently moving forward to implement a capital maintenance program for the rail ROW that includes bridge rehabilitation and other capital repairs as funding is available.

Recreational passenger rail service is provided by Roaring Camp between Felton and the Santa Cruz Beach Boardwalk (Boardwalk), which includes a portion of the SCBRL within the western portion of the Project area. New recreational rail service is also contemplated as part of the Administration, Coordination, and License Agreement.

In February 2021, RTC completed the Transit Corridor Alternatives Analysis to determine the best type of commuter transit for the line, which represents another potential use of the line. Funding needed to advance commuter rail on the SCBRL has not been secured. Commuter rail remains in the RTC's Regional Transportation Plan (RTP) but on the financially unconstrained list of projects due to the lack of identified funding to the region for a commuter rail project. Refer to Section 1.2.4, *Subsequent Actions and Considerations*, for "Other Relevant Studies."

1.2.3 MBSST Network Master Plan and EIR

MBSST Network Master Plan

The RTC prepared the MBSST Network Master Plan (RTC 2014) to establish the continuous alignment and a set of design standards for the MBSST Network, including a bicycle and pedestrian (multi-use) trail along the Coastal Rail Trail spine (RTC-owned rail corridor) and associated spur trails, for the length of Santa Cruz County.

The trail network was divided into 20 segments, each with independent utility and logical beginning and end points, to be built as funding became available. Starting in Davenport and continuing to the Santa Cruz/Monterey county line, trail projects are located in or adjacent to the rail corridor and serve as the Coastal Rail Trail. The spine is complemented by spur trails or other bicycle and pedestrian facilities that connect to coastal access points or other desirable destination points.

The planning process for the MBSST Network Master Plan involved extensive stakeholder interviews and public workshops.

On November 7, 2013, after a 2.5-year planning and public outreach process, the MBSST Network Master Plan was adopted and the Master Plan EIR was certified (with a revision adopted in February 2014). These documents are available on the RTC website: https://sccrtc.org/projects/multi-modal/monterey-bay-sanctuary-scenic-trail. All local jurisdictions through which the trail will traverse have also adopted the MBSST Network Master Plan, including the cities of Capitola, Santa Cruz, and Watsonville, as well as the County of Santa Cruz. It is recognized that the MBSST Network will be funded, designed, and constructed in independent segments and that diversions onto the on-road street system and away from the rail ROW, where it is in existence, may be needed for some segments as interim measures to continuous development.

MBSST Network Master Plan EIR

The MBSST Network Master Plan EIR (RTC 2013) is a programmatic EIR,[1] prepared to understand the environmental impacts of the proposed MBSST Network project at a planning level. The process is designed to enable informed decision-making and public participation. As a program-level document, the MBSST Network Master Plan EIR focuses on the broad changes to the environment that would be expected to result from implementing the MBSST Network project. As individual trail segments move forward with implementation and design, it is understood that additional environmental review may be required.

Since the MBSST Network Master Plan EIR was certified, the following trail projects are under development and being constructed in phases as funding is secured:

- Segment 5 (7.5 miles): Phase 1 construction 2024, Phase 2 construction to be determined
- Segment 7 (2.1 miles): Phase 1 completed 2021, Phase 2 construction 2022
- Segment 8 (San Lorenzo River Trestle Bridge): Completed 2019
- Segments 8 and 9 (2.2 miles): Design and environmental review
- Segments 10 and 11 (4.5 miles): Design and environmental review
- Segments 12 (1.2 miles): Design and environmental review
- Segment 18 (1.2 miles): Phase 1 completed 2021, Phase 2 to be determined

Coastal Rail Trail Segments 8 and 9 EIR

In September 2021, the City issued a Notice of Preparation (NOP) to begin the process of preparing this stand-alone, project-level EIR for the Project (refer to Section 1.3.2, *Notice of Preparation*). Although this EIR is not formally "tiering" from the Master Plan EIR (see *CEQA Guidelines*, Section 15152), it will nevertheless make use of relevant information contained in the Master Plan EIR, including applicable mitigation measures.

As described in the beginning of this section, this EIR includes an evaluation of the City's *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*, which is part of the Project and therefore analyzed at an equal level of detail.

No rail service is proposed as part of the Project, and there would be no other changes in the existing rail corridor as a result of the Project, other than those described above as they relate to

[1] A "program EIR" is an EIR that may be prepared on a series of actions that can be characterized as one large project and are related geographically or as logical parts in the chain of contemplated actions (*CEQA Guidelines*, Section 15168). A program EIR is typically a planning level document providing a more general level of analysis, whereas a project-level EIR is prepared for a specific project and includes more focus and detail (see *CEQA Guidelines*, Section 15161).

the implementation of the *Ultimate Trail Configuration*, including minor rail realignment described in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*.

The Project, Ultimate Trail Configuration with or without the optional first phase, does not include rail service but includes preservation of the railroad facilities consistent with the policies set forth in the adopted MBSST Network Master Plan, including Policy 1.2.4, *Develop trails in such a way so that future rail transit services along the corridor are not precluded* (RTC 2014).

1.2.4 Subsequent Actions and Considerations

This section discusses several relevant actions and considerations since adoption of the MBSST Network Master Plan and Master Plan EIR in 2013, including other relevant studies, project funding, railbanking, and local advocacy groups.

Other Relevant Studies

The following studies have been conducted since the MBSST Network Master Plan was adopted in 2013.

Rail Transit Feasibility Study (2015)

In June 2015, the RTC completed a feasibility study to examine the potential for regularly scheduled rail transit service on the SCBRL. Several rail transit service scenarios were examined based on different assumptions, such as headways, station locations, and train vehicle technology. Ridership and cost estimates were generated for each scenario to provide information based on the types of service for which data was available at the time and what transit service may look like on the rail line.

The study raised additional questions that need to be considered before the RTC and community decide if rail transit should be pursued and, if so, what characteristics and technologies are best suited to the community. To that end, the Expenditure Plan in Measure D has a Rail Corridor category that includes (1) protecting and maintaining the ROW, including existing infrastructure of the rail line, and (2) performing in-depth environmental and economic analysis of future transit and other transportation options on the ROW through a transparent public process.

Unified Corridor Investment Study (2019)

The RTC's Unified Corridor Investment Study (UCS), completed in January 2019, contains an analysis of the options for transportation uses of the rail ROW. The UCS examines which transportation improvements work together to make the most effective use of the community's north/south transportation corridor, including three parallel routes: Highway 1, Soquel/Freedom, and the SCBRL.

The UCS identified improvements for travel by auto, transit, bicycle, and walking. Improvements on the RTC-owned rail corridor that were evaluated in the UCS include a trail next to the rail line, the trail on the rail line, freight rail, passenger rail, and bus rapid transit. The UCS provided information about how changes to Highway 1, Soquel Freedom, and the SCBRL could impact the community. One of the outcomes of this study was to protect the SCBRL for high-capacity public transit adjacent to a bicycle and pedestrian trail.

The Preferred Scenario adopted by the RTC includes protection of the rail line in public ownership for high-capacity public transit use by maintaining the tracks and allowing freight and excursion service. The Preferred Scenario also envisions continued development of the trail along the rail ROW as presented in the MBSST Master Plan and EIR. Although the Preferred Scenario provides a

recommendation for an approach to future transportation investments, the UCS does not approve a project or commit to a definite course of action for implementation.

Transit Corridor Alternatives Analysis (2021)

In February 2021, RTC completed the Transit Corridor Alternatives Analysis to determine the best type of commuter transit for the line, which represents a fourth potential use of the line. Funding needed to advance commuter rail on the SCBRL has not been secured.

Santa Cruz County Regional Transportation Plan (2022)

The RTP is a long-range (22-year) transportation plan for the Santa Cruz County area. The plan includes strategies to address the County's transportation challenges, a list of transportation needs, and priorities for limited funds. The RTP is updated every 4 to 5 years to address new trends, issues, and priorities and to incorporate new federal and state regulations. The RTC adopted the 2045 RTP in June 2022.

The potential environmental impacts of the 2045 RTP are collectively detailed in one EIR for the 2045 Metropolitan Transportation Plan and its Sustainable Communities Strategy, which encompass the three RTPs for Santa Cruz, Monterey, and San Benito counties. The Final EIR was certified by Association of Monterey Bay Area Governments in June 2022.

Funding

The Project is receiving funds for design, engineering, environmental review, and construction from multiple sources, as shown in **Table 1-1**.

Table 1-1 Segments 8 and 9 Project Funding Sources

Purpose	Land Trust of Santa Cruz County	Measure D (City, County, RTC)	ATP[a]	Total
Design and Environmental	$1.5 million	$370,000	$3.1 million	$4.6 million
Construction		$5 million	$34.3 million	$39.3 million

[a] The design and environmental funds have been received, and the construction funds are anticipated upon EIR certification.

ATP = Active Transportation Program; RTC = Santa Cruz County Regional Transportation Commission

Santa Cruz County Measure D: Transportation Improvement Expenditure Plan

In November 2016, Measure D was approved by over two-thirds of Santa Cruz County voters. The half-cent, 30-year sales tax measure includes funding for transportation projects that provide safer routes to schools for local students; maintain mobility and independence for older adults and those with disabilities; invest in bicycle and pedestrian pathways and bridges; repave roadways, repair potholes, and improve safety on local streets; ease congestion on major roadways; and reduce greenhouse gas (GHG) emissions that causes global warming. The 2016 Measure D Transportation Improvement Expenditure Plan (Measure D Expenditure Plan) is available on the RTC website: https://sccrtc.org/wp-content/uploads/ExpenditurePlan-voterApproved_8Nov2016.pdf.

According to the Measure D Expenditure Plan, 17% of the revenues will be allocated for the MBSST, otherwise known as the Coastal Rail Trail, for people walking and bicycling along the coast in Santa Cruz County. Funds will be used for trail construction, maintenance, operation, management, and drainage of the rail and trail corridor and will leverage other state and federal grants for completion of the trail network.

The Measure D Expenditure Plan also states that 8% of the revenues will be used for preservation of the rail corridor infrastructure and analysis of its future potential use to better serve Santa Cruz County residents and visitors. Projects include analysis of possible future transit and other transportation uses of the corridor, and maintenance and repair of the publicly owned SCBRL. The Measure D revenues do not include funding for any new train/rail service.

Active Transportation Program Funding

The California Active Transportation Program (ATP), Cycle 3, provided funds for pre-construction phases of the Project, including design and environmental review, with matching funds provided by the Santa Cruz County Land Trust. The ATP was created by Senate Bill 99 (Chapter 359, Statutes of 2013) and Assembly Bill 101 (Chapter 354, Statutes of 2013) to encourage increased use of active modes of transportation. Funds in the ATP are both state and federal and were augmented by Senate Bill 1 transportation funds.

The City is targeting California ATP to fund construction of the Project. The Project is a strong candidate to receive state ATP funding due to: how it will transform the bicycle and pedestrian network in the Project area, the extensive level of public participation and input that has gone into the project development, the safety benefits achieved from a new bicycle and pedestrian facilities separated from vehicular traffic, the Project's potential to reduce single-occupancy vehicle travel and GHG reduction benefits, and the Project's locations near and within disadvantage communities. In 2017, the City received $3.1 million in ATP funds for the Project to develop the preliminary design and environmental analysis.

The City's success in receiving the ATP funding is largely attributed to the Project's competitiveness and matching local funds.

Railbanking

Railbanking is required to implement *Optional First Phase: Trail on the Rail line (Interim Trail)* of the Project.

Railbanking allows a freight railroad corridor that would otherwise be abandoned to instead be preserved under federal legislation. Railbanking falls under the jurisdiction of the Federal STB with no guarantees as to outcome. To railbank the SCBRL, the common carrier would need to file for abandonment and work with the RTC to negotiate a railbanking agreement, subject to the approval of the STB or for the RTC to petition the STB for an adverse abandonment.

Railbanking can be prevented by another freight operator who is willing to assume the financial liability of the line by providing an Offer of Financial Assistance to assume the freight easement, the associated common carrier responsibilities, and the maintenance obligation of the line. Railbanking can also potentially be prevented by objections by freight rail customers or the owner of a potential stranded line. However, the STB may not refuse to issue a railbanking order based on third-party objections.

With cooperation of effected parties, railbanking could be completed in as short as 6 months. However, without an agreement, the RTC will need to file an action with the STB to allow for the line to be railbanked. The STB would make its determination based on the viability of freight beyond Watsonville, the current condition of the rail line, and the cost associated with its repair.

With opposition, an STB determination on railbanking could take 2–3 years.

Although a railbanking agreement preserves the railroad ROW, an interim trail cannot preclude the future potential re-activation of freight rail service. The Ultimate Trail Configuration can also be constructed if railbanking occurs, but railbanking is not required to construct the Ultimate Trail Configuration.

Although railbanking is required to construct the trail on the rail line, the City in coordination with the RTC and County decided to include a "trail on the rail line" as an optional first phase of the Project in the CEQA environmental document for the Project.[2] This EIR includes an evaluation of the City's *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*, which is part of the Project and therefore analyzed at an equal level of detail.[3]

Local Advocacy Groups

Trail with Rail

The Santa Cruz County Friends of the Rail and Trail was established in 2002 and worked to advocate for the purchase of the trail ROW and to support development of the rail trail. The Santa Cruz County Friends of the Rail and Trail's mission is to promote, support, and enable the development of a rail with trail transportation system in Santa Cruz County (FORT 2022; www.santacruztrail.org).

Trail Only

During development of trail planning efforts, citizen groups formed to advocate for a "trail only" project on the SCBRL. In this scenario, freight service would be abandoned, rail transit service would not be implemented, tracks would be removed, and pedestrian and bicycle paths would be located on the rail bed. Citizen groups include Trail Now (www.trailnow.org) and Greenway (www.scgreenway.org).

1.3 CEQA Environmental Review Process

CEQA requires all state and local government agencies to consider the environmental consequences of nonexempt projects over which they have discretionary authority before taking action on those projects. To identify and disclose the environmental impacts, the lead agency must prepare the appropriate environmental documentation (EIR or negative declaration). As the CEQA lead agency, the City has decided to prepare a project-specific EIR. Although this EIR is not tiering from the RTC's Master Plan EIR, this project-specific EIR uses relevant information contained in the Master Plan EIR, including identification of appropriate and feasible mitigation measures to reduce potentially significant impacts.

[2] Such hurdles do not make the Interim Trail option infeasible per se. Rather, CEQA case law holds that alternatives that would require legislative actions or other policy hurdles may sometimes be part of a reasonable range of alternatives in an EIR (refer to *Citizens of Goleta Valley v. Board of Supervisors* (1990) 52 Cal.3d 553, 573 ["the mere fact that an alternative may require legislative action does not necessarily justify its exclusion from the EIR"]; *Residents Ad Hoc Stadium Committee v. Board of Trustees* (1979) 89 Cal.App.3d 274, 286 ["it is not appropriate to disregard alternatives simply because the alternative. .. may require implementing legislation"] for example).

[3] Such a level of detail is more than is required under CEQA, which normally does not require that options or alternatives be addressed at the same level of detail as a proposed project. (e.g., *Sierra Club v. City of Orange* (2008) 163 Cal.App.4th 523, 546-547 [rejecting the need for an "in-depth review" of alternatives, and upholding the use of a "checkbox matrix" as a vehicle for addressing them, citing *CEQA Guidelines*, Section 15126.6[d]].

CEQA requires agencies to comply with the following objectives and procedures and with the process summarized on **Figure 1-2** when preparing an EIR:

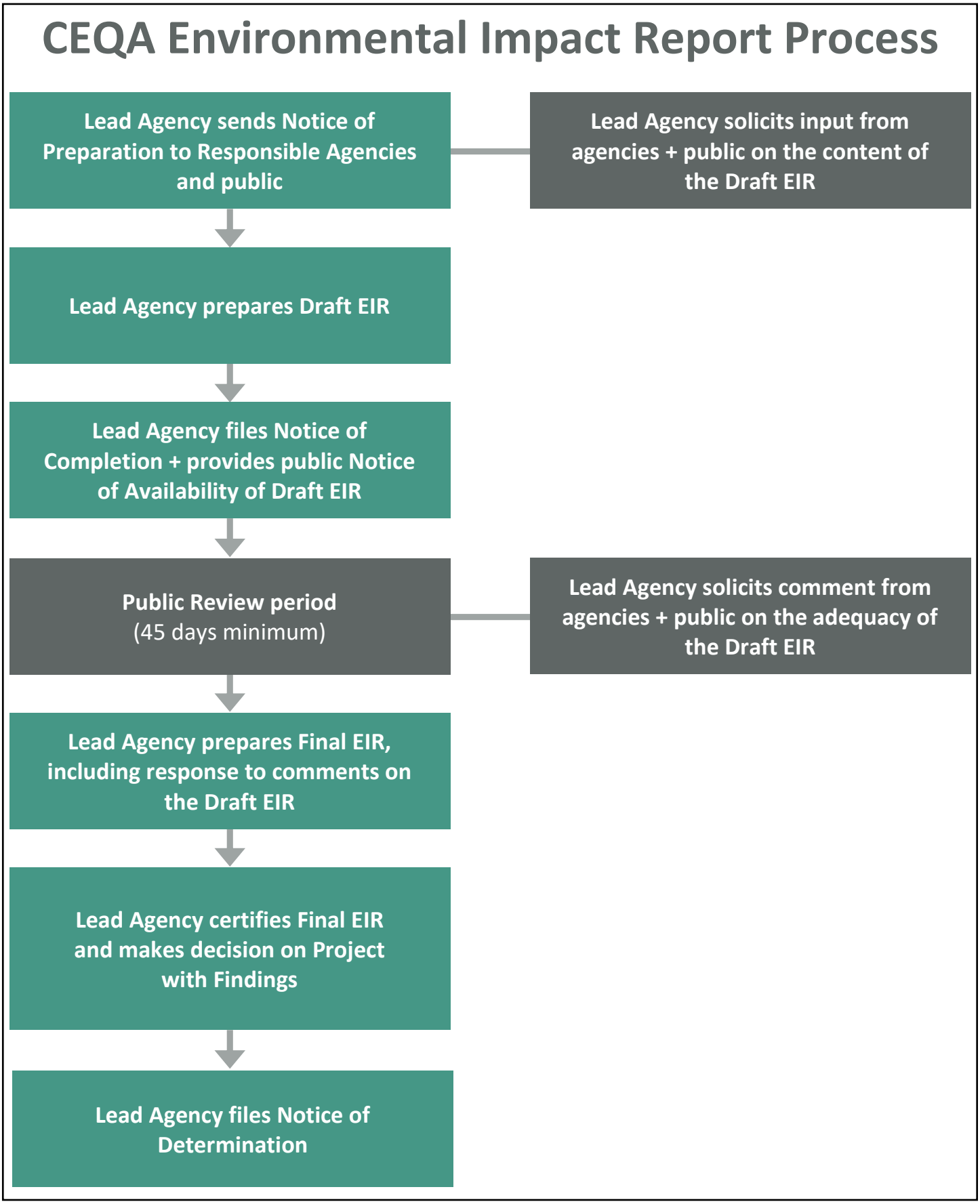
- Identify and prevent environmental damage (i.e., significant environmental effects) by identifying mitigation measures, alternatives, and mitigation monitoring
- Enhance public participation and foster intergovernmental coordination through:
  - Publication of the NOP
  - Project scoping
  - State Clearinghouse and public review of environmental documents
  - Preparation of a Final EIR responding to public input
- Disclose the rationale for agency decision-making through the adoption of findings addressing the disposition of all significant environmental effects identified in the EIR, and the issuance of Statements of Overriding Consideration where projects with significant unavoidable environmental effects are approved

1.3.1 Lead, Responsible, and Trustee Agencies

The *CEQA Guidelines* define "lead," "responsible," and "trustee" agencies. "Lead agency" means the public agency that has the principal responsibility for implementing or approving a project. The lead agency will determine the appropriate environmental documentation and be responsible for its preparation. The City is the CEQA lead agency for the Project.

A "responsible agency" refers to a public agency subject to California law other than the "lead agency" with discretionary approval over a project. A "trustee agency" refers to a state agency having jurisdiction by law over natural resources affected by a project. As listed in Section 2.7, *Required Permits and Approvals*, responsible and trustee agencies for the Project include the following:

- California Coastal Commission
- California Department of Fish and Wildlife
- California Department of Transportation
- California Public Utilities Commission Rail Crossings and Engineering Branch
- California State Parks
- California Regional Water Quality Control Board
- County of Santa Cruz
- Santa Cruz County RTC



Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

Harris & Associates

Figure 1-2
CEQA EIR Process

1.3.2 Notice of Preparation

The purpose of the NOP is to solicit participation from responsible and coordinating federal, state, and local agencies and from the public in determining the scope of an EIR.

The scoping process for this EIR was formally initiated on September 14, 2021, with submission of the NOP to the State Clearinghouse in compliance with CEQA (State Clearinghouse No. 2021090262) for distribution to state agencies. Additionally, a copy of the NOP was sent to 31 federal, state, and local agency representatives; 11 members of various organizations; and 246 individual members of the public who have expressed interest in City and RTC projects in the past. The NOP was also posted on the City's website. The 30-day NOP review period was from September 14, 2021, to October 15, 2021. A copy of the NOP is included in **Appendix B**.

1.3.3 Scoping Process

Scoping refers to the process used to assist the lead agency in determining the focus and content of an EIR. Scoping solicits input on the potential topics to be addressed in an EIR, range of project alternatives, and possible mitigation measures. Scoping is also helpful in establishing methods of assessment and in selecting the environmental effects to be considered in detail. Tools used in scoping of this EIR included a distribution of the NOP (described above) and public scoping meetings.

A virtual public scoping meeting was held on October 6, 2021. The scoping meeting provided another opportunity for attendees to comment on environmental issues of concern and the alternatives that should be discussed in the EIR.

In response to the NOP and public scoping meeting, the City received written comments from five agencies and 25 individuals (4 of which are affiliated with an identified organization). **Table 1-2** provides a summary of the written comments received from the agencies and organizations concerning the scope of the environmental analyses and alternatives to be considered, but it is not a comprehensive list of all the comments received. **Appendix B** includes the NOP, a more detailed summary table of the comments received, and a copy of all the comments received.

Table 1-2 Summary of NOP Comments Received

Commenters	Summary of Key Issues and Concerns	Location of Topic in EIR
Agencies		
California Coastal Commission	Railbanking and the steps required should be clearly described.	Chapters 1, *Introduction*
	The alternatives considered should include a trail alongside another type of transit option or a trail alone option. The EIR should identify a preferred alternative that is most protective of coastal resources and complies with California Coastal Act policies.	Chapter 5, *Project Alternatives*
	Overwater crossings should minimize impacts to public views and visual character, employ construction BMPs to protect water quality and sensitive species, and consider tsunami events.	Chapter 3, *Environmental Impact Analysis*, Sections 3.1, *Aesthetics*; 3.3, *Biological Resources*; and 3.8, *Hydrology and Water Quality*
	The EIR should evaluate a range of alternatives to ensure seamless	Chapter 5, *Project Alternatives*

Table 1-2 Summary of NOP Comments Received

Commenters	Summary of Key Issues and Concerns	Location of Topic in EIR
	connectivity between Trestle Bridge and Segment 9; safe crossings at roadways; and improve access, safety, and traffic congestion along the Boardwalk.	
California Department of Fish and Wildlife	The EIR should evaluate reasonably foreseeable future phases of the Project and potential direct and indirect impacts to wildlife species, habitat, creeks, and drainage from the permanent footprint, type of trail base, new light sources, and fencing.	Chapter 3, *Environmental Impact Analysis*, for all topics and specifically 3.1, *Aesthetics*; 3.3, *Biological Resources*; and 3.8, *Hydrology and Water Quality*
California Department of Parks and Recreation	The Santa Cruz tarplant is located in the meadows at Twin Lakes State Beach.	Chapter 3, *Environmental Impact Analysis*, Section 3.3, *Biological Resources*
California Public Utilities Commission	The Project could impact pedestrian circulation and safety due to traffic volume increases.	Chapter 3, *Environmental Impact Analysis*, Section 3.12, *Transportation*
Santa Cruz County RTC	The RTC supports environmental review of alternative alignments.	Chapters 3, *Environmental Impact Analysis*, and 5, *Project Alternatives*
Organizations		
Friends of the Rail Trail	Potential impacts from the Interim Trail include demolition of rail, handling/disposal of hazardous waste, discontinuation of rail use, restoration of rail use, and construction of new trail alongside the rail.	Chapter 3, *Environmental Impact Analysis*, and specifically Section 3.7, *Hazards and Hazardous Materials*
	Potential Project impacts include GHG, climate change, circulation, and hazardous materials.	Chapter 3, *Environmental Impact Analysis*, Sections 3.6, *Greenhouse Gas Emissions/Climate Change*; 3.7, *Hazards and Hazardous Materials*; and 3.12, *Transportation*
Save Our Big Trees	Potential impacts on aesthetics and habitat from potential tree removal.	Chapter 3, *Environmental Impact Analysis*, Sections 3.1, *Aesthetics*, and 3.3, *Biological Resources*
Sierra Club	Potential impacts to pedestrian and bicycle access to the coast.	Chapter 3, *Environmental Impact Analysis*, Sections 3.9, *Land Use and Planning*, and 3.12, *Transportation*
Trail Now	The analysis of the Interim Trail (railbanking) should include the Boardwalk Trestle.	Chapter 5, *Project Alternatives*

BMP = best management practice; EIR = environmental impact report; GHG = greenhouse gas; RTC = Santa Cruz County Regional Transportation Commission

1.4 EIR Scope and Content

The scope and content of the EIR is guided by the requirements set forth in the *CEQA Guidelines* and input gathered during the NOP and scoping process identified above. This EIR evaluates the potential impacts of the Project in relation to the following environmental topics:

1. Aesthetics
2. Agricultural and Forestry Resources
3. Air Quality
4. Biological Resources
5. Cultural Resources
6. Energy
7. Geology and Soils
8. Greenhouse Gas Emissions/Climate Change
9. Hazards and Hazardous Materials
10. Hydrology and Water Quality
11. Land Use and Planning
12. Mineral Resources
13. Noise
14. Population and Housing
15. Public Safety and Services
16. Recreation
17. Transportation
18. Tribal Cultural Resources
19. Utilities and Services Systems
20. Wildfire

This EIR identifies (1) potential environmental impacts, including project-specific and cumulative effects, of the Project for these topics in accordance with the provisions set forth in the *CEQA Guidelines*, Appendix G, and (2) feasible mitigation measures, where possible, that would reduce or eliminate significant adverse environmental effects.

Additionally, this EIR identifies significant unavoidable impacts, significant irreversible changes in the environment, and growth inducement.

1.5 EIR Organization

In addition to this section, the EIR contains the following sections:

- Chapter 2, *Project Description*, describes the Project in detail.
- Chapter 3, *Environmental Impact Analysis,* discusses various resources potentially affected by the Project, as outlined in Section 1.4, *EIR Scope and Content*. There is a separate section for each environmental topic that presents the existing conditions, relevant regulatory setting, methodology and significance thresholds, potential impacts, mitigation measures, and a

summary comparison of the Ultimate Trail Configuration with the optional Interim Trail. There is also a section for effects found to be less than significant based on the initial study prepared for the Project).

- Chapter 4, *Other CEQA-Required Discussions*, discusses the Project's cumulative impacts, growth-inducing impacts, significant irreversible environmental changes, significant environmental impacts that cannot be avoided, and energy effects.
- Chapter 5, *Project Alternatives*, describes the various alternatives considered and either dismissed from further analysis or analyzed in this document.
- Chapter 6, *List of Preparers and References*, provides a list of preparers of and contributors to the EIR and a bibliography.

1.6 Public Outreach

This section briefly describes the public outreach that has occurred and is planned for the Project.

- October 6, 2021 – NOP Scoping Meeting
- March 31, 2022 – Public Open House to share draft schematic plans
- April 11, 2022 – RTC Bicycle Advisory Committee
- April 12, 2022 – RTC Elderly and Disabled Advisory Committee
- April 18, 2022 – City Transportation and Public Works Commission
- May 10, 2022 – City Council of refined schematic plans
- October 19, 2022 – Draft EIR Public Comment Meeting
- January 2023 (date to be determined) – Planning Commission Public Hearing regarding slope modification/variance, design permit, watercourse development permit, and heritage tree removal permit

The Project design plans are posted on the City's website as Significant Project:

- www.cityofsantacruz.com/coastalrailtrail

This page intentionally left blank.

2 Project Description

2.1 Overview

The City of Santa Cruz (City), in coordination with the County of Santa Cruz (County) and the Santa Cruz County Regional Transportation Commission (RTC), is proposing the **Coastal Rail Trail Segments 8 and 9 Project** (Project) to be developed along the RTC-owned rail corridor that generally parallels the coastline in central Santa Cruz County (**Figure 1-1**). The City is serving as the California Environmental Quality Act (CEQA) lead agency.

The Project is a 2.2-mile bicycle and pedestrian system proposed to extend along the RTC-owned railroad corridor from the Beach Street/Pacific Avenue roundabout on the west to the eastern side of 17th Avenue on the east, excluding the recently constructed San Lorenzo River (SLR) Trestle Bridge Improvements (**Figure 2-1**). Segment 8 (0.6 mile) is composed of improving an existing Class IV on-street bicycle system and pedestrian sidewalk. Segment 9 (1.6 miles) is composed of a new multi-use bicycle and pedestrian trail.

The project purpose is to provide an accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the rail corridor, consistent with the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan.

This environmental impact report (EIR) includes an evaluation of the City's *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)* for Segment 9, which is part of the Project and therefore analyzed at an equal level of detail. Segment 8 of the Project would be the same, with or without the optional Interim Trail. The trail alignments are presented in **Appendices A.1** and **A.2**, respectively.

- **Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)**. In Segment 9, the trail would be constructed on the inland side of the railroad tracks, except for the short portion on the eastern end of the Project where the trail would switch to the coastal side. Fencing would be installed between the trail and tracks as necessary in accordance with the MBSST Network Master Plan. This is considered the preferred alignment and approach by the City, County, and RTC.
- **Optional First Phase: Trail on the Rail line (Interim Trail)**. All or a portion of the trail in Segment 9 would be constructed in approximately the same location of the railroad tracks by removal of the rails and ties. Upon completion of this first phase, the Interim Trail would be removed and the rail reinstated, and the Ultimate Trail Configuration would be constructed.

This EIR chapter describes the Project in detail and contains the following sections:

- Project Location
- Project Purpose and Objectives
- Project Characteristics
- Project Operation and Maintenance
- Project Construction
- Required Permits and Approvals

2.2 Project Location

The 2.2-mile-long Project area limits extend along the RTC-owned Santa Cruz Branch Rail Line corridor in central Santa Cruz County, within the California Coastal Zone (**Figure 1-1**).

The Project alignment extends from the Beach Street/Pacific Avenue roundabout within the City limits on the west, excluding the recently constructed SLR Trestle Bridge Improvements, to the eastern side of 17th Avenue in the unincorporated Live Oak area of the County on the east (**Figure 2-1**).

The Project alignment extends through developed portions of the City and County, including residential, commercial, industrial, and recreational land uses, as well as Twin Lakes State Beach open space.

Appendix A includes schematic plans (30% design) of the entire 2.2-mile alignment for both the Ultimate Trail Configuration (**Appendix A.1**) and the optional Interim Trail (**Appendix A.2**).

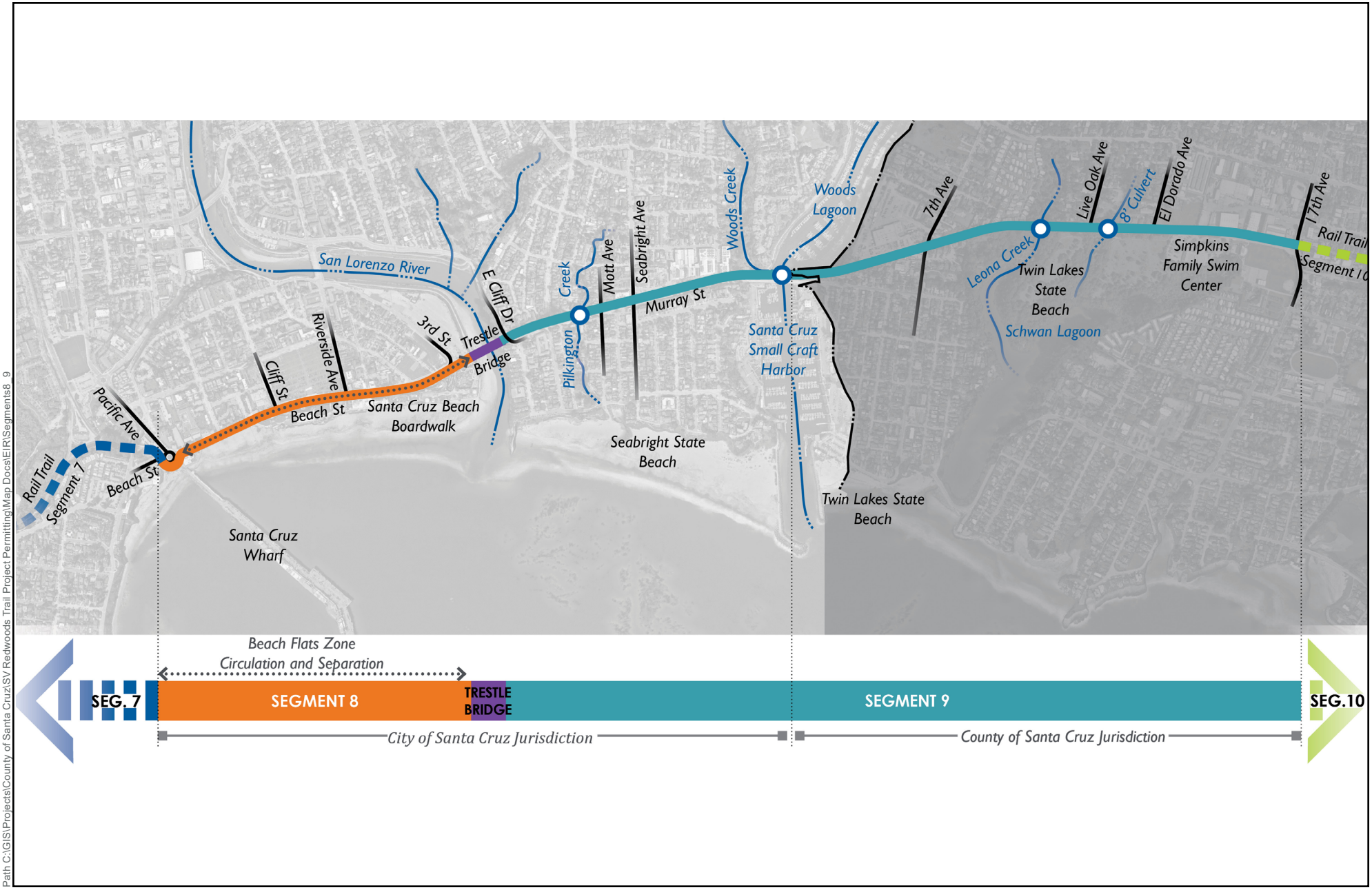
2.3 Project Purpose and Objectives

The project **purpose** is to provide an Americans with Disabilities Act (ADA)-accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the existing rail corridor.

The project **objectives** are based on and consistent with objectives and policies in the adopted MBSST Network Master Plan.

The project objectives include the following:

1. Provide a continuous public trail with continuity in design along the Santa Cruz Branch Line railroad corridor and connecting spur trails in Santa Cruz County (Master Plan objective 1.1)
2. Develop the trail so future rail transportation service along the corridor is not precluded (Master Plan policy 1.2.4)
3. Maximize ocean views and scenic coastal vistas along a coastal alignment for experiencing and interpreting the Monterey Bay National Marine Sanctuary (sanctuary), coastal environment, local history, and affected communities (Master Plan policies 1.1.2 and 1.1.4, objective 2.1)
4. Maximize safety and serenity for experiencing and interpreting the sanctuary and landscapes by providing a trail separate from roadway vehicle traffic (Master Plan goal 1)
5. Minimize trail impacts to private lands, including agricultural, residential, and other land uses (Master Plan objective 1.5)
6. Minimize trail impacts to sensitive habitat areas and special-status plant and animal species (Master Plan objective 1.4, policy 1.4.1)
7. Comply with requirements of local, state, and federal agencies with jurisdiction



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: RMM Design 2022.

Harris & Associates

N

0 800 1600

Feet

Figure 2-1

Project Location

Coastal Rail Trail Segments 8 and 9

2.4 Project Characteristics

This section describes the following for the *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, as well as the *Optional First Phase: Trail on the Rail line (Interim Trail)*, with additional detail provided in the design plans shown in **Appendices A.1** and **A.2**, respectively:

- Trail Alignment
- Trail Width and Materials
- Trail Features

Figure 2-2 provides graphic representations of these trail alignments.

2.4.1 Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Trail Alignment

Segment 8

Segment 8 (0.6 mile) is composed of a Class IV on-street bicycle system and pedestrian sidewalk improvements (**Figure 2-1**). Refer to sheets CP-1.01 to CP-1.07 in **Appendix A.1**.

Beginning from the western end, Segment 8 begins at the Pacific Avenue/Beach Street roundabout and travels along Beach Street, with pedestrians using the existing sidewalk and bicyclists using the existing bike lanes (cycle track[1]) in the roadway, both on the coastal side of the railroad tracks and both to be improved as part of the Project. At Cliff Street, the existing bikeway crosses the railroad tracks and continues along the roadway on the inland side of the rail. Segment 8 continues along Beach Street and the Santa Cruz Beach Boardwalk (Boardwalk) and ends at the SLR Trestle Bridge.

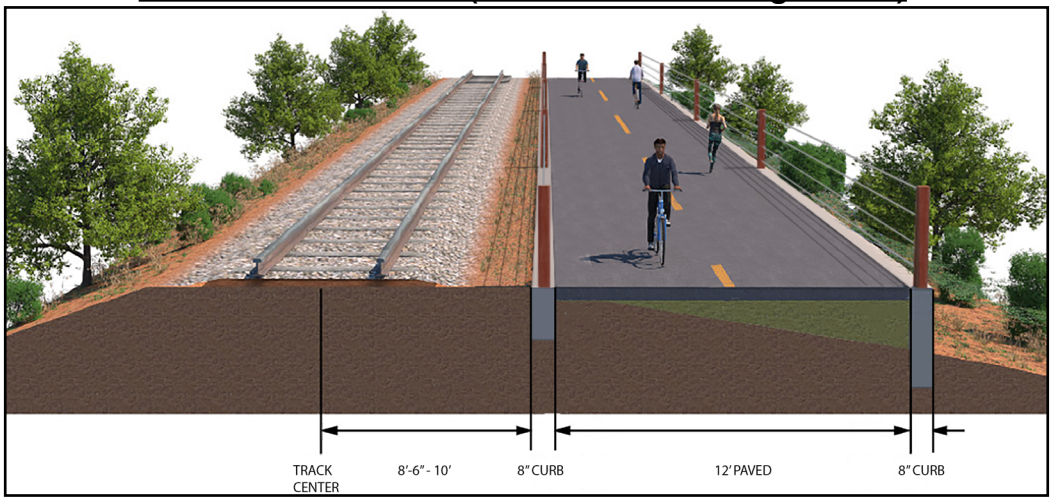
Many of the trail elements already exist on Segment 8, including a dedicated bikeway for bicyclists along Beach Street and sidewalk facilities for pedestrians. Planned improvements include the following:

- High-visibility striping and surface improvements for bike facility, crosswalk, and mixing zone visibility
- Raised "curb" separators (~3–6 inches high) between bike lane and vehicle travel lane from Pacific Avenue to Third Street, and retention or replacement of the existing vulcanized rubber divider adjacent to the on-street parking from Pacific Avenue to Third Street
- Sidewalk installation and widening
- Short retaining wall (up to 24 inches tall, 670 feet long) along the Boardwalk side to protect landscaping
- Storm drain inlet relocation at the eastern end of Beach Street near the existing restrooms
- Northbound bike lane on Pacific Avenue/Beach Street roundabout

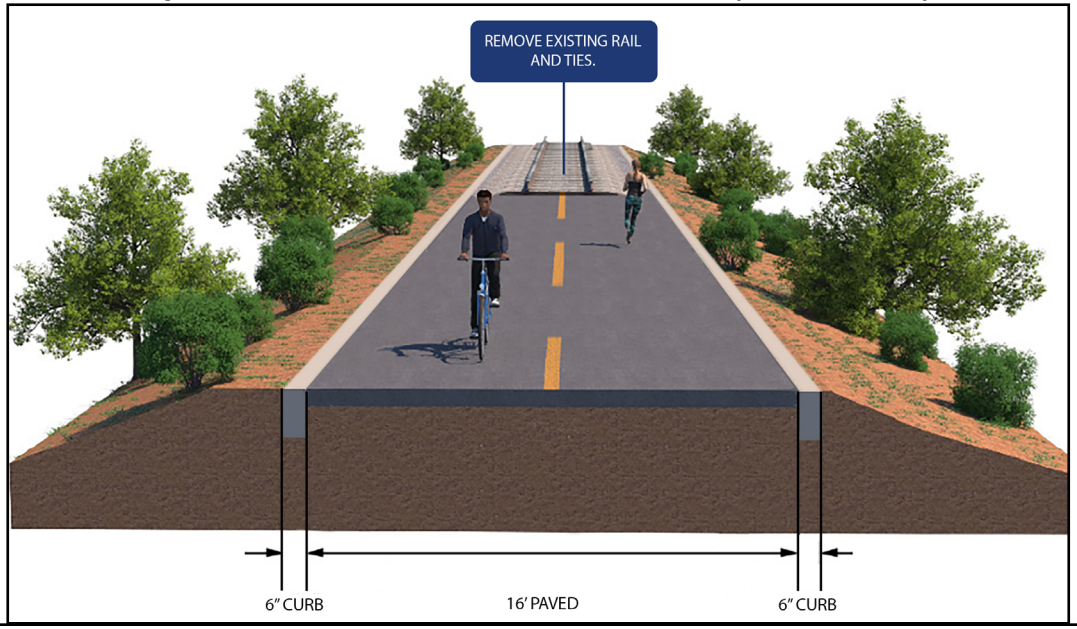
There would be no improvements to the portion crossing the SLR Trestle Bridge because this section was completed in 2019, when the City replaced the existing 4-foot-wide wooden walkway with a new light weight, 10-foot-wide bicycle/pedestrian bridge along the inland side of the railroad tracks.

[1] A cycle track is a bikeway within or next to the roadway but is made distinct from both the sidewalk and general purpose roadway by a vertical barrier or elevation difference.

Trail next to Rail Line (Ultimate Trail Configuration)



Optional First Phase: Trail on Rail Line (Interim Trail)



Source: RMM Design 2022.

Figure 2-2

Representative Illustration of Proposed Project

Coastal Rail Trail Segments 8 and 9

Harris & Associates

Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Segment 9

Segment 9 (1.6 miles) is composed of a multi-use bicycle and pedestrian trail alongside the railroad tracks (**Figures 2-1** and **2-2**). Refer to sheets CP-1.08 to CP-1.22 in **Appendix A.1**.

From the SLR Trestle Bridge on the west, Segment 9 continues along the inland side of the tracks until just past El Dorado Avenue where it crosses to the coastal side near the eastern end (connecting trail users to the Simpkins Swim Center and Boys and Girls Club). Segment 9 ends on the eastern side of 17th Avenue.

The descriptions below references specific sheets in parentheses.

Trail Connections. The preliminary design plans include the following trail connections to adjacent streets and facilities (presented from west to east):

- Hiawatha/Cayuga Connection (sheet CP-1.09)
- Hiawatha/Mountain View (sheet CP-1.09)
- Seabright Social/Java Junction Connection, western side of Seabright Avenue (sheet CP-1.10)
- Bronson Connection (sheet CP-1.11)
- West Harbor Connection (sheet CP-1.12)
- Live Oak Connection (sheet CP-1.19)
- El Dorado Connection (sheet CP-1.20)
- Simpkins Family Swim Center/Live Oak Community Resources Center/Twin Lakes State Beach Connections (sheets CP-1.20 and CP-1.21)

East Harbor Connection (Design Option). On the eastern side of the Santa Cruz Harbor crossing, there could be a switchback trail connection down to the East Harbor service road (refer to **Appendix A.3**).

Simpkins Swim Center Connection. At the eastern end of Segment 9, the trail crosses from the inland side of the tracks to the coastal side to provide access to the Simpkins Family Swim Center/Live Oak Community Resources Center/Twin Lakes State Beach. This location is collectively called Simpkins Swim Center for purposes of this discussion. The improvements in this area are summarized below (**Appendix A.1**, sheets CP-1.20 and CP-1.21):

- The existing unpaved trail, extending approximately 70 feet from the railroad tracks to the parking lot, would be paved and widened from a range of approximately 10 to 20 feet.
- The three existing standard parking stalls would be converted to two ADA parking stalls, with required signage and pavement striping.
- The existing unpaved trails extending from this connection into Twin Lakes State Beach would remain unpaved with no improvements.
- Additionally, there could be another connection to the Simpkins Swim Center farther east along the trail, across from the main entrance. This connection would include a paved ADA ramp and stairs from the trail to other portions of Simpkins Swim Center.

Retaining Walls. The design plans include upslope and downslope retaining walls, ranging from approximately 1.5 feet up to 18 feet in height, at the following general locations along the trail to support slopes and provide the required distance between the trail and rail (presented from west to east). The wall lengths listed below are the distance where one or more walls are proposed, whether it is only on one side of the trail alignment or both sides (refer to **Appendix A.1** for detail). Retaining wall materials and color would blend with the surrounding environment.

- SLR Trestle Bridge to Mountain View Avenue (2–18 feet high, 830 feet long) (sheets CP-1.08, CP-1.09, CD-3.01, CD-3.02)
- Pilkington Creek to Mott Avenue (1–5 feet high, 100 feet long) (sheets CP-1.09, CP-1.10)
- Mott Avenue to Seabright Avenue (1–3 feet high, 10 feet long) (sheets CP-1.10, CD-3.04)
- Seabright Avenue to just past Owen Street (1–16 feet high, 600 feet long) (sheets CP-1.10 to CP-1.13, CD-3.04, CD-3.05)
- East side of Harbor Trail Connection to 7th Avenue (1–10 feet high, 950 feet long) (sheets CP-1.14 to CP-1.16, CD-3.06, CD-3.07)
- 7th Avenue to Leona Creek (0.5–3 feet high, 1,000 feet long) (sheets CP-1.16 to CP-1.18, CD-3.08, CD-3.09)
- Leona Creek to El Dorado Avenue (1–7 feet high, 1,000 feet long) (sheets CP-1.18 to CP-1.20, CD-3.09 to CD-3.11)
- Simpkins Swim Center (0.5–3 feet high, 550 feet long) (sheets CP-1.20 to CP-1.22, CD-3.12, CD-3.13)

Waterway Crossings and Viaducts. The trail crosses several waterways (presented from west to east):

- Pilkington Creek – Viaduct with fiberglass reinforced polymer (FRP) deck called "Pilkington Creek Viaduct" or a prefabricated steel clear-span bridge called "Pilkington Creek Bridge" (sheets CP-1.09, CD-3.03, BP-2.01).
- Santa Cruz Harbor – Cantilever with FRP deck attached on the northern side of the existing Woods Lagoon Railroad Bridge (sheets CP-1.12, CP-1.13, BP-4.01).
- Leona Creek – Viaduct with FRP deck called "Leona Creek Viaduct" (sheets CP-1.18, CD-3.09, BP-6.01). This location is too long for a clear-span bridge.
- Unnamed Stream 1545 – Viaduct with FRP deck called "Live Oak Viaduct" (sheets CP-1.19, CD-3.10, BP-7.01). This location is too long for a clear-span bridge.

Additionally, viaducts are proposed at the following two locations on the western and eastern sides of the Santa Cruz Harbor because, compared to retaining walls that would otherwise be needed at the viaduct locations, the viaducts would require less tree removal and impact to riparian vegetation:

- West of Santa Cruz Harbor – Viaduct with FRP deck called "Wood Creek Viaduct" (sheets CP-1.12, CP-1.13, CD-3.05, BP-3.01)
- East of Santa Cruz Harbor – Viaduct with FRP deck called "East Harbor Viaduct" (sheets CP-1.13, CP-1.14, CD-3.06, BP-5.01)

Roadway Crossings. The trail crosses several roads (presented from west to east). Roadway crossings include some combination of the following improvements: new sidewalks, ADA-compliant curb ramps, grading and drainage improvements, roadway lighting, signage, and striping improvements on the roadway and trail. Flexible bollards could be added later. Additional improvements unique to each crossing are identified below:

- Mott Avenue (sheet CP-1.10)
  - Bulb-outs
  - Northbound contraflow bike lane (bike only access from Murray Street onto trail and Mott Avenue)
  - Drainage improvements and connections to existing storm drain system

- Seabright Avenue (sheet CP-1.10)
  - Trail crossing interconnected with traffic signals
  - Chicanes (curves added by design) to slow trail users before the intersection
  - Drainage improvements and connections to existing storm drain system
- 7th Avenue (sheet CP-1.16)
  - Rectangular rapid-flashing beacons placed in advance of the crossing in each direction to warn drivers
  - Relocated rail crossing equipment
  - Chicanes to slow trail users before the intersection
  - Drainage improvements
- 17th Avenue (sheet CP-1.22)
  - Raised median flanking the trail as it crosses roadway
  - Rectangular rapid-flashing beacons placed in advance of the crossing in each direction to warn drivers

An active private pedestrian rail line crossing (recognized by the California Public Utilities Commission and Federal Rail Administration) is at the end of El Dorado Avenue and another active private pedestrian rail line crossing (recognized by the California Public Utilities Commission and Federal Rail Administration) is two-tenths of a mile east of El Dorado Avenue. This eastern existing private crossing would be improved for access to Twin Lakes State Beach on the southern side (**Appendix A.1**, sheets CP-1.19, CP-1.20). At this location, the trail includes track panel installation, track and track bed adjustments, and passive rail crossing control systems (e.g., signs and warnings). The western private crossing at the end of El Dorado Avenue would remain in its active status with no crossing improvements proposed.

Roadway Improvements. At the Seabright Avenue/Murray Street intersection, a dedicated right-turn lane from westbound Murray Street to northbound Seabright Avenue would be added to improve traffic flow (sheets CP-1.10 to CP-1.12). Associated intersection improvements would include traffic signal relocation, curb and gutter relocation, minor street paving, curb ramp replacements, drainage improvements, and new traffic striping, including bike lanes and high-visibility crosswalks. Additionally, to accommodate the new turn lane, approximately 730 feet of sidewalk along the southern side of Murray Street (east of the Seabright intersection) would be reconstructed and widened, with a small retaining wall to support the existing slope.

The existing traffic signal system would be modified to add phasing and equipment for the trail crossing signal. It is anticipated that pedestrians would cross with typical pedestrian signals, and bicyclists would have a bicycle signal display. Modification or supplement to the existing distinguishable message sign would be included so westbound traffic on Murray Street would be instructed to yield or stop to pedestrians and cyclists when the trail crossing is active.

Rail Realignment. To accommodate both the railroad tracks and the trail, 1,670 linear feet of railroad track would be realigned up to 7.5 feet southward within the RTC-owned rail corridor. The track realignment extends from approximately 500 feet west of 7th Avenue to approximately 1,100 feet east of 7th Avenue.

Right-of-Way (ROW). The trail and all improvements would be located primarily within the RTC-owned rail corridor ROW, City road ROW, or County road ROW, based on the current design plans (**Appendix**

A.1). Temporary or permanent easements may be needed for construction and project features such as, but not limited to, drainage improvements, retaining walls, wall tie-backs, and sidewalks.

The exception is the Simpkins Swim Center Connection, described above (sheets CP-1.20 to 1.22). At this location, the trail and parking improvements would extend into public ROW, including the Simpkins Swim Center parcel owned by the County (~13,700 or ~12,000 square feet (SF) not including parking improvements) and the Twin Lakes State Beach parcel owned by California State Parks (~2,800 or ~1,500 SF not including parking improvements).

Trail Width and Materials

Segment 8

The existing and planned widths of the on-street bicycle system and pedestrian sidewalk are described below:

- The existing 8-foot-wide two-way bike facility is located in the roadway and was implemented prior to development of Class IV guidelines. The Project will bring this bike system closer into alignment with current Class IV[2] design guidelines for separation from vehicular traffic and maintain the 8-foot-wide section.
- The existing concrete sidewalk, from the Beach Street roundabout to approximately 75 feet east of Cliff Street, is generally 12 feet wide and then transitions to the Boardwalk. There are no planned improvements for this section.
- From 200 feet west of Riverside Avenue to 70 feet west of Park Place, the existing concrete sidewalk ranges from 3.5 feet to 5.5 feet. The sidewalk in this section would be widened up to 6 feet to better accommodate pedestrians. Low retaining walls would be added to the planters between the sidewalk and Boardwalk to create the additional sidewalk space. The sidewalk widening includes some conformance paving and regrading of three existing driveways, three replaced curb ramps (Raymond Street, Leibrandt Avenue, and Park Place intersections), and one replaced stairway at the Raymond Street intersection.

Segment 9

The planned widths and characteristics of the multi-use bicycle and pedestrian trail are described below. The trail widths meet the MBSST Network Master Plan trail classification of a Class I bikeway.[3] Based on the design criteria for Class I bikeways, the minimum combined paved width would be 12 feet, including paved shoulders, or narrower at structures for stream crossings and areas with constrained ROW, as allowed.

- The typical width of the paved trail would be 12 feet with striping in the middle to separate eastbound and westbound.
- The trail width would be reduced at the following locations:

[2] A Class IV bikeway (also called a protected bike lane or cycle track) is physically separated from the vehicle travel lane by more than a white stripe. This can entail motor traffic with a vertical feature such as flexible posts, barriers, on-street parking, or raised curbs as proposed for this segment of the Coastal Rail Trail.

[3] A Class I bikeway is defined as a multi-use paved path that is separated from any street or highway and permits a variety of users (including bicyclists, walkers, joggers, wheelchairs, and scooters), per the California Department of Transportation (Caltrans) Highway Design Manual, Chapter 1000, Bicycle Transportation Design (Caltrans 2015: 1000-1-15).

  - 10–12 feet – For the 60 feet approaching the western side of the Woods Lagoon Railroad Bridge to transition from the 12-foot-wide portion of the Woods Creek Viaduct to the 10-foot-wide Woods Lagoon Railroad Bridge width (sheets CP-1.13, BP-3.01).
  - 10 feet – For the length of the Woods Lagoon Railroad Bridge because of structural limitations for a wider cantilevered trail (sheets CP-1.12, CP-1.13, BP-4.01).
  - 10 feet – For the 60 feet east of the Woods Lagoon Railroad Bridge and continuing the length of the East Harbor Viaduct to reduce impacts to existing trees (sheets CP-1.13, CP-1.14, BP-5.01).
  - 10 feet – For the length of the Leona Creek Viaduct because of ROW constraints (sheets CP-1.18, CD-3.09, BP-6.01).
  - 9 feet, 6 inches to 10 feet – For the length as well as west and east of the Live Oak Viaduct because of ROW constraints (sheets CP-1.19, CD-3.10, CD-3.11, BP-7.01).
  - 9 feet, 6 inches, to 10 feet, 4 inches – Near El Dorado Avenue because of ROW constraints (sheets CP-1.20, CD-3.11).

- The paved trail would be hot mix asphalt (HMA) pavement. Consistent with other completed rail trail segments, the impervious paved trail would provide an agency-acceptable cap that prevents the trail users from direct exposure to any underlying soil contaminants.[4]
- The Woods Lagoon Railroad Bridge and viaducts are expected to have FRP decks and guardrails.
- There could be post-and-wire safety fencing between the trail and tracks (described under *Fencing and Guardrails* below). There would also be fencing and/or guardrails along the tops of tall retaining walls and elevated trail features where necessary for safety, as described under *Trail Features*.

Trail Features

Fencing and Guardrails

Fencing and/or guardrails would be installed along the sides of bridges, viaducts, and other areas along the trail alignment for safety and security in accordance with the MBSST Master Plan. The Ultimate Trail Configuration could include safety fencing in Segment 9 to separate trail users from the rail, as needed (see **Figure 2-2**). The railroad tracks would remain in place and would not be improved as part of the Project, except for the portion requiring relocation to accommodate the trail (described under *Rail Realignment* above), where new materials would be used to reconstruct the tracks.

The minimum horizontal distance allowed by the rail owner and operator (consistent with federal guidelines) from the centerline of the railroad tracks to the edge of any trail improvements at or above the railroad track elevation would be 8 feet, 6 inches, on straight sections and 9 feet, 6 inches, to 10 feet on curved sections.

Guardrails would be installed along the sides of bridges, viaducts, walls, and other raised trail features where needed for trail user safety.

The fencing and guardrails are expected to be constructed at 4 feet, 8 inches, in height and consistent with the fencing types identified in the MBSST Network Master Plan. To promote wildlife movement, the bottom of the proposed fence would be 16 inches above finish grade. Guardrails would have no gaps exceeding 4 inches.

[4] A soil sampling report (AMEC Geomatrix 2009) concluded that soils along the rail corridor in Segments 8 and 9 have elevated concentrations of arsenic attributed to the potential application of arsenical herbicides to control weed growth.

If determined necessary by the City or County, additional fencing and/or guardrails could be installed along the trail alignment for safety, security, and trespass prevention in accordance with the MBSST Master Plan.

Lighting

Portions of the trail would be illuminated or benefit from existing light sources along adjacent roadways and crossings. Along other portions of the trail, lighting would be installed for safety. Any new lighting would be "dark sky compliant" in that it would minimize light pollution and offensive glare by directing light downward so it would not spill beyond the trail. Solar lighting would be used where feasible.

New lighting types that are planned and/or under consideration include the following (from west to east):

- East Cliff Drive undercrossing by installing surface-mounted fixtures under the East Cliff Drive overpass and/or surface-mounted wall packs on the retaining wall (sheet CP-1.08).
- East Cliff Drive undercrossing to Seabright Avenue by installing a combination of pole-mounted fixtures with LED lights along the trail and poles with a single head light fixture to match existing streetlights at trail crossings. In addition, converting existing single luminaire streetlights located along Murray Street to double luminaire (sheets CP-1.08, CP-1.09, CP-1.10).
- Seabright Avenue to the western side of Woods Lagoon Railroad Bridge by installing a combination of pole-mounted fixtures with LED lights along the trail and/or surface-mounted wall packs on retaining walls. In addition, converting existing single luminaire streetlight located along Murray Street to double luminaire (sheets CP-1.11, CP-1.12).
- Eastern side of Woods Lagoon Railroad Bridge to 17th Avenue by installing a combination of pole-mounted fixtures with LED lights and/or surface-mounted wall packs on retaining walls (CP-1.13 through CP-1.22).
- El Dorado Avenue trail crossing by installing a pole with a single head light fixture (sheet CP-1.20).
- 17th Avenue trail crossing by installing a pole with a single head light fixture (sheet CP-1.22).

Additionally, on bridges and viaducts and through the riparian zone, there would be low-level lighting directed down toward the trail, similar to that on the SLR Trestle Bridge. There could be additional lighting upgrades where the trail crosses roadways at Seabright, 7th, and 17th Avenues and other locations as determined necessary for trail user safety.

Trash Receptacles

The trail would extend past several areas with existing trash receptacles, including Main Beach, Santa Cruz Harbor, and Simpkins Swim Center. Additional trash receptacles, including recycling receptacles and dog waste stations, would be added near the following locations:

- Mott Avenue road crossing (sheet CP-1.10)
- Seabright Avenue road crossing (sheet CP-1.10)
- 7th Avenue road crossing (sheet CP-1.16)
- 17th Avenue road crossing (sheet CP-1.22)

Benches and Bike Racks

Benches, bike racks, and bike share stations could be added along the trail alignment where there is sufficient room. Currently under consideration is one new bench installed in Segment 9 at the

Simpkins Swim Center Connection (sheet CP-1.20) and a bike share station in Segment 8, just west of Riverside Avenue (sheet CP-1.05, note 2-18).

Signage

Informational, educational, and directional signage would be placed at strategic locations along the trail similar to the family of signage developed and installed for Coastal Rail Trail Segment 7, located between Natural Bridges Drive and the Beach Street/Pacific Avenue roundabout, in Santa Cruz.

Educational signage would include information about the history of the railroad and special-status plant and wildlife species, such as the Santa Cruz tarplant, monarch butterfly, and San Francisco dusky footed woodrat.

Additionally, there would be signage indicating camping is prohibited, loitering is prohibited from dusk to dawn, and passing through for active transportation is allowable 24 hours per day. Other signage determined necessary for public safety.

Landscaping/Revegetation

New landscaping is not currently included in the project plans. However, the Project includes modifications to the existing irrigation system for areas affected by trail improvements to Segment 8, such as sidewalk widening and associated hardscape adjustments, and new trail sections along the Simpkins Swim Center property in Segment 9. Future plantings along the trail could include a native, drought-tolerant seed mix (non-irrigated).

Any existing landscaped or vegetated areas disturbed by trail improvements, such as sidewalk widening and associated hardscape adjustments in Segment 8, would be replaced. Planting plans will describe modifications to the planting areas for use by the landscape restoration contractors.

Any trees removed to accommodate the Project would be replaced at an appropriate location determined by qualified biologists in coordination with the regulatory permitting agencies and jurisdictional authorities (e.g., City, County, State Parks).

2.4.2 Optional First Phase: Trail on the Rail Line (Interim Trail)

As described in Section 2.1, *Overview*, the City is considering an optional interim phase of the Project, whereby the trail would be located on the rail line. This could occur if the common carrier files for abandonment of freight operations along the Santa Cruz Branch Rail Line with the Surface Transportation Board or if the RTC files for adverse abandonment. If this occurs, all or a portion of the Santa Cruz Branch Rail Line would likely be railbanked to preserve the corridor for future freight reactivation and then could be used for a multi-use trail as an interim condition.

Therefore, this optional first phase includes three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

The transition from Interim Trail to Ultimate Trail Configuration would attempt to minimize trail use disruptions. There are several unknown factors about how the transition would occur, but the most likely trigger would be reactivation of freight. Therefore, staff and monetary resources would likely focus on re-establishing freight service and then constructing the Ultimate Trail Configuration. However, how the transition is implemented would be informed by several factors, including available funding for trail construction and the intention of minimizing disruptions to trail users.

1) Implementation of the Interim Trail

Trail Alignment

SEGMENT 8

Segment 8 (0.6 mile) is composed of a Class IV on-street bicycle system and pedestrian sidewalk improvements (**Figure 2-1**). Under this scenario, Segment 8 would be the same as described for the Ultimate Trail Configuration in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. Refer to the description of Segment 8 in Section 2.4.1 and sheets CP-1.01 to CP-1.07 in **Appendix A.1**.

SEGMENT 9

Segment 9 (1.6 miles) is composed of a multi-use bicycle and pedestrian trail on the rail line (**Figures 2-1** and **2-2**). For Segment 9, all or a portion of the trail would be constructed on the rail line in approximately the same location of the railroad tracks by removal of the rails and ties from just east of the SLR Trestle Bridge to the eastern side of 17th Avenue. Refer to sheets CP-1.08 to CP-1.22 in **Appendix A.2**. The descriptions below reference specific sheets in parentheses.

Trail Connections. The design plans include the following trail connections to adjacent streets and facilities (presented from west to east). The trail connections for the Interim Trail are generally the same as for the Ultimate Trail Configuration, except there would be no Hiawatha/Cayuga Connection (sheet CP-1.09) because of excessive elevation differences between the street and the railroad tracks.

- Hiawatha/Mountain View (sheet CP-1.09)
- Seabright Social/Java Junction Connection, western side of Seabright Avenue (sheet CP-1.10)
- Bronson Connection (sheet CP-1.11)
- West Harbor Connection (sheet CP-1.12)
- Live Oak Avenue Connection (sheet CP-1.19)
- El Dorado Avenue Connection (sheet CP-1.20)
- Simpkins Family Swim Center/Live Oak Community Resources Center/Twin Lakes State Beach Connections (sheets CP-1.20 and CP-1.21)

East Harbor Connection (Design Option). The potential trail connection on the eastern side of the Santa Cruz Harbor crossing down to the East Harbor service road is generally the same as the Ultimate Trail Configuration (refer to **Appendix A.3**).

Simpkins Swim Center Connection. The connections to Simpkins Swim Center and associated improvements are generally the same as the Ultimate Trail Configuration. Refer to the description in Section 2.4.1 and **Appendix A.2**, sheets CP-1.20 and CP-1.21).

Retaining Walls. The design plans for the Interim Trail include retaining walls, ranging from approximately 1 foot to 8 feet in height, at the following locations along the trail (presented from west to east). Retaining wall materials and color would blend with the surrounding environment. The Interim Trail has fewer retaining walls than the Ultimate Trail Configuration. Refer to the sheet references indicated below in **Appendix A.2**.

- SLR Trestle Bridge to East Cliff Drive overpass (1–6 feet high, 35 feet long) (sheet CP-1.08)
- Bronson Street to Owens Street (1–5 feet high, 600 feet long) (sheets CP-1.11, CP-1.12)

- West Harbor Connection (0.5–2 feet high, 200 feet long) (sheet CP-1.13)
- East Harbor Connection (2 feet high, 45 feet long) (sheet CP-1.13)
- Leona Creek (1–2 feet high, 260 feet long) (sheets CP-1.17, CP-1.18)
- Stream 1545 (1–2 feet high, 210 feet long) (sheet CP-1.19)

Waterway Crossings. The trail crosses waterways (presented from west to east). The Interim Trail has fewer improvements required for waterway crossings than the Ultimate Trail Configuration. Refer to the sheet references indicated below in **Appendix A.2**.

- Pilkington Creek (sheet CP-1.09). No improvements.
- Santa Cruz Harbor (sheets CP-1.13, BP-1.01). The existing railroad bridge would be repurposed for the Interim Trail by removing track and ties and replacing with new FRP decking or HMA paving and railing system.
- Leona Creek (sheet CP-1.18). No improvements.
- Stream 1545 (sheet CP-1.19). No improvements.

Roadway Crossings. The trail crosses several roads (presented from west to east). The improvements at road crossings are similar to the Ultimate Trail Configuration described in Section 2.4.1. Refer to the sheet references indicated below in **Appendix A.2**.

- Mott Avenue (sheet CP-1.10)
- Seabright Avenue (sheet CP-1.10)
- 7th Avenue (sheet CP-1.16)
- 17th Avenue (sheet CP-1.22)

Additionally, there are existing rail line crossings at the end of Live Oak Avenue and El Dorado Avenue, located on the northern side of the railroad tracks, to access Twin Lakes State Beach on the southern side, and both crossings would be retained (**Appendix A.2**, sheets CP-1.19, CP-1.20).

Roadway Improvements. The improvements at the Seabright Avenue/Murray Street intersection would be generally the same as the Ultimate Trail Configuration. They include adding a dedicated right-turn lane from westbound Murray Street to northbound Seabright Avenue, as well as the other improvements described for the Ultimate Trail Configuration to improve traffic flow (sheets CP-1.10 to CP-1.12).

The existing traffic signal system would be modified to add phasing and equipment for the trail crossing signal. It is anticipated that pedestrians would cross with typical pedestrian signals, and bicyclists would have a bicycle signal display. Modification or supplement to the existing distinguishable message sign would be included so westbound traffic on Murray Street would be instructed to yield or stop to pedestrians and cyclists when the trail crossing is active.

ROW. The trail and all improvements would be located within the RTC-owned rail corridor ROW, City road ROW, or County road ROW based on the current design plans (**Appendix A.2**). Temporary or permanent easements may be needed for construction and project features such as, but not limited to, drainage improvements and sidewalks.

The exception is the Simpkins Swim Center Connection, described above and in Section 2.4.1 (**Appendix A.2**, sheets CP-1.20 and 1.21). At this location, the Interim Trail and improvements would extend into public ROW, including the Simpkins Swim Center parcel owned by the County and the Twin Lakes State Beach parcel owned by California State Parks, by a similar but slightly less amount than the Ultimate Trail Configuration.

Trail Width and Materials

SEGMENT 8

The existing and planned widths of the on-street bicycle system and pedestrian sidewalk would be the same as that described for the Ultimate Trail Configuration in Section 2.4.1.

SEGMENT 9

The planned widths and characteristics of the multi-use bicycle and pedestrian trail are described below. The trail widths meet the MBSST Network Master Plan trail classification of a Class I bikeway.[5] Although the minimum width for a Class I path is 12 feet, the Interim Trail width typically would be 16 feet, including paved shoulders, or narrower at structures for stream crossings and areas with constrained ROW, as allowed:

- The typical width of the paved trail would be 16 feet with striping in the middle to separate eastbound and westbound.
- The width could narrow to between 14 and 16 feet at Leona Creek crossing.
- The width would narrow to approximately 13 feet to the east and west of the Woods Lagoon Railroad Bridge and for the length of the bridge.
- The paved trail would be HMA pavement. Consistent with other completed rail trail segments, the impervious paved trail would provide an agency-acceptable cap that prevents the trail users from direct exposure to any underlying soil contaminants.[6]
- The Woods Lagoon Railroad Bridge is expected to have FRP decks or HMA paving.

Trail Features

FENCING AND GUARDRAILS

Fencing and/or guardrails would be installed for safety in areas where drop-offs are over 30 inches and in proximity to vehicular traffic.

The fencing and guardrails are expected to be constructed using steel posts (4 feet, 8 inches, in height) and galvanized steel cable, similar to the fencing installed in Segment 7 and Segment 8 along the SLR Trestle Bridge. To promote wildlife movement, the lowest cable of the fence would be 16 inches above finish grade. Guardrails would have no gaps exceeding 4 inches.

LIGHTING

Like the Ultimate Trail Configuration, portions of the Interim Trail would be illuminated or benefit from existing light sources along adjacent roadways and crossings, and new lighting would be installed along other portions of the trail for safety. Refer to the discussion under *Lighting* in Section 2.4.1. At the Harbor crossing, the new lighting would be installed along the existing Woods Lagoon Railroad Bridge for the Interim Trail rather than on the cantilever for the Ultimate Trail Configuration.

[5] A Class I bikeway is defined as a multi-use paved path that is separated from any street or highway and permits a variety of users (including bicyclists, walkers, joggers, wheelchairs, and scooters), per the Caltrans Highway Design Manual, Chapter 1000, Bicycle Transportation Design (Caltrans 2015: 1000-1-15).

[6] A soil sampling report (AMEC Geomatrix 2009) concluded that soils along the rail corridor in Segments 8 and 9 have elevated concentrations of arsenic attributed to the potential application of arsenical herbicides to control weed growth.

TRASH RECEPTACLES

Like the Ultimate Trail Configuration, the Interim Trail would extend past several areas with existing trash receptacles (e.g., Main Beach, Santa Cruz Harbor, Simpkins Swim Center), and additional trash receptacles, including recycling receptacles and dog waste stations, would be added at four roadway crossings (Mott Avenue and Seabright Avenue, sheet CP-1.10; 7th Avenue, sheet CP-1.16; 17th Avenue, sheet CP-1.22).

BENCHES AND BIKE RACKS

Benches, bike racks, and bike share stations could be added along the trail alignment where there is sufficient room. Benches are under consideration at the following locations: near Bronson Street (sheet CP-1.11), eastern side of Santa Cruz Harbor (sheet CP-1.13), near Alta Loma Lane (sheet CP-1.15), between 7th Avenue and Leona Creek (sheet CP-1.17), near Live Oak Avenue (sheet CP-1.19), and at the Simpkins Swim Center Connection (sheet CP-1.20). Bike shares are under consideration at the following locations: just west of Riverside Avenue (sheet CP-1.05, note 2-18) and at the Seabright Avenue crossing (sheet CP-1.10, note 1-07).

SIGNAGE

Informational, educational, and directional signage would be placed at strategic locations along the trail, similar to the Ultimate Trail Configuration. Refer to the description under *Signage* in Section 2.4.1.

LANDSCAPING/REVEGETATION

Like the Ultimate Trail Configuration, new landscaping is not currently included in the project plans. However, there would be modifications to the existing irrigation systems affected by trail improvements in Segment 8, and there could be future landscaping along the trail between the SLR Trestle Bridge and Santa Cruz Harbor in Segment 9. Any existing landscaping or vegetated areas disturbed by trail improvements would be relandscaped/revegetated. Any trees removed to accommodate the Project would be replaced. Refer to the description under *Landscaping/Revegetation* in Section 2.4.1.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

The Interim Trail and associated fencing, retaining walls, benches, and other supporting features would be demolished.

The railroad tracks would be rebuilt in approximately the same alignment.

3) Construction of the Ultimate Trail Configuration

The new trail would be constructed in the Ultimate Trail Configuration, as described in Section 2.4.1.

2.5 Project Operation and Maintenance

The following description of trail operation and maintenance applies to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and *Optional First Phase: Trail on the Rail Line (Interim Trail)* unless otherwise indicated.

No rail service of any type is proposed as part of the Project, and there would be no other changes in the rail corridor as a result of the Project other than those described above as they relate to the

implementation of the Ultimate Trail Configuration, including rail realignment described in Section 2.4.1. For additional information, refer to Section 1.2.2, *Rail Operation and Maintenance*, in Chapter 1, *Introduction*.

Trail Use

Users

The ADA-accessible trail is intended for pedestrians and bicyclists. Dogs would be allowed on leash.

Although electric bicycles with a rating limited to 20 miles per hour (mph) would be allowed in accordance with California law (Assembly Bill 1096),[7] motorized vehicles would not be allowed. The exception would be emergency vehicles and public agency maintenance vehicles, both of which would not exceed vehicular weight limits of the trail. Electronic skateboards with a rating limited to 20 mph would be allowed as well. Depending on the volume of users, other speed limits may be imposed and indicated on posted signage.

The RTC estimates there could be 3,000–4,000 trail users per day based on information contained in the Unified Corridor Investment Study (RTC 2019). Thus, an average of 3,500 trail users per day is used for the purposes of discussion and analysis in this EIR.

Hours

The normal operating hours would be dawn to dusk, with public "pass through" at all times to allow for early morning and evening commuting and transportation use. These hours are consistent with Segment 7 and the Arana Gulch trail in the City. The signage described above under *Trail Features* would include the hours and recommend trail users use a light and reflectors after dusk and before dawn.

The trail would not be gated or otherwise physically "closed." Flexible bollards (that easily bend if struck by bicyclists) could be added later at roadway crossings. Lockable hard bollards could be installed at access points if there is a demonstrated safety issue over time.

Trail Maintenance

Trail maintenance responsibility would be based on jurisdiction. The City would maintain Segment 8 and the portion of Segment 9 within City limits, and the County would maintain the portion of Segment 9 outside the City limits.

In accordance with the MBSST Master Plan EIR, general maintenance activities anticipated for the trail include the following:

- Tree, shrub, and grass trimming
- Fallen tree removal
- Weed control
- Graffiti removal
- Trash/recycling collection and disposal and waste collection bags restock
- Pavement sealing, repaving, and pothole repair

[7] According to Assembly Bill 1096, which took effect in January 2016, electric bicycles (e-bikes) are no longer regulated like mopeds, and the same rules of the road apply to both e-bikes and human-powered bicycles. E-bikes that go up to 28 mph are not allowed on paths https://b.3cdn.net/bikes/2f0872d06ea26eb2b7_8zm6bi1fc.pdf.

- Bollard replacement
- Fence repair and replacement
- Signage repair and replacement
- Pavement marking refreshment and replacement
- Lighting repair and replacement
- Drainage inspection and cleaning
- Trail structure inspection and required maintenance

Additionally, the trail would be inspected for damage and signs of excessive erosion and potential inundation following major storm events. If necessary, appropriate actions would be taken to minimize the risk to trail users. Such actions could include trail segment closure, structural improvements, or trail relocation, for which appropriate environmental review would be conducted.

2.6 Project Construction

2.6.1 Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Timing, Duration, Hours

Construction would occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. Additionally, construction could also start at 7:00 a.m., Monday through Friday, or occur on Saturdays or Sundays with written approval from the City or County. There would be no construction on national holidays. Emergencies may require work outside these hours.

Construction of the Ultimate Trail Configuration, without the optional Interim Trail, is estimated to begin in 2023 or 2024, and would continue for approximately 24 months, as shown in **Table 2-1**.

Table 2-1 Estimated Construction Duration for the Ultimate Trail Configuration

Trail Section	Duration	Month
Segment 8 (Beach Street)	3 months	1–3
Segment 9 (SLR Trestle Bridge to Seabright Avenue)	6 months	1–6
Segment 9 (Seabright Avenue to 7th Avenue)	6 months	6–12
Segment 9 (7th Avenue to 17th Avenue)	12 months	12–24
Total	**24 months**	

SLR = San Lorenzo River

General Methodology

Construction activities for Segment 8 would improve existing sidewalks, curb ramps, stairs, driveways, and bike lanes and thus be relatively minor.

In general, construction activities for Segment 9 would include excavation of material sources, clearing and grubbing, and tree removal; grading, retaining wall construction, drainage improvements, and placement of crushed aggregate base and paved surface; and revegetation, installation of fencing, signs, lighting, and other trail and safety-related features. There would be drilling associated with construction of the retaining walls and viaducts but no pile driving.

The Project would be constructed in accordance with the recommendations included in the project Geotechnical Investigation Report (Pacific Crest Engineering 2021) and associated Technical Memorandum (Pacific Crest Engineering June 16, 2022 Rev 1), as well as any additional recommendations identified in the final Geotechnical Investigation to be prepared upon final project design. Additionally, the structures (viaducts, bridge, cantilever) would be constructed in accordance with American Association of State Highway and Transportation Officials (AASHTO) and California Department of Transportation (Caltrans) standards.

Retaining Walls

As described above for the Ultimate Trail Configuration under *Trail Alignment*, there would be several upslope and downslope retaining walls of various sizes to support the trail at specific locations along the alignment. The retaining walls will typically consist of steel soldier piles set into concrete-filled drilled footings. Wood or concrete lagging will be used to retain the soil where the wall is above and below the trail. If wall is below and supports the trail, concrete lagging may be preferred to retain the soil. Walls taller than 10 feet typically use drilled and grouted tie-back anchors into the soil. The design will incorporate integral tie-back anchorages into the soldier piles to eliminate the need for protruding, horizontal walers. Other retaining wall types included and/or under consideration for design include 6-inch retaining curb, 8-inch retaining curb, and Caltrans 2018 Standard Plan Retaining Walls (Type 1, Type 1A, Type 5, and Type 6).

Waterway Crossings

As described above for the Ultimate Trail Configuration under *Trail Alignment*, there are four locations where the trail would cross an identified waterway (Pilkington Creek, Santa Cruz Harbor, Leona Creek, and Stream 1545).

Viaducts. A viaduct with FRP deck would be installed to cross the Pilkington Creek (or a clear-span bridge), Leona Creek, and Stream 1545 waterways and depressions along the trail alignment. Additionally, viaducts would be installed on both the western and eastern sides of the Santa Cruz Harbor to minimize tree removal. The viaduct is envisioned to consist of largely spaced (20 to 30 feet) drilled concrete pilings supporting a lightweight deck system composed of FRP. Longer spans may be practical with a composite steel girder and FRP deck assembly. The elevated trail may extend over numerous spans to conform to the grades on each side of the drainage crossings. Slope stabilization methods such as hydroseeding, vegetating, high performance turf reinforcement mats (with or without vegetation), and/or linked concrete tiles (hollowed for vegetation or solid) may occur at each viaduct to reduce future maintenance needs. The pilings required for the viaducts would be at least 20 feet deep.

Clear-Span Bridge. At the Pilkington Creek crossing, a clear-span bridge is also under consideration. It would be a clear-span prefabricated bridge supported on each end by an abutment. Each abutment would be supported by drilled concrete pilings. The deck would likely be concrete with steel framing support.

Cantilever. A cantilever deck system would be installed on the Woods Lagoon Railroad Bridge to cross the Santa Cruz Harbor. The existing bridge is 420 feet long, consisting of seven equal 60-foot spans. The proposed deck support system will cantilever from the side of the existing precast concrete railroad bridge and comprise a composite deck system. The deck is envisioned as an FRP composite with steel or FRP framing support elements.

During construction, a debris containment system would be installed under the existing Woods Lagoon Railroad Bridge and span beyond the edge of the proposed cantilever to ensure construction debris and materials do not enter the Santa Cruz Harbor. The debris containment device would be secured to the existing railroad bridge and would remain in place during all construction activities over the water.

STORMWATER DRAINAGE

In general, stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system, proposed drainage system, and/or natural material swale included in the trail design. At the western end of Segment 9, between the SLR Trestle Bridge and Seabright Avenue, the existing drainage would be a vegetated swale with native planting palette seed mix approved by qualified biologists. All off-site flows would match existing condition drainage patterns.

In Segment 8, there would be new and replaced impervious surfaces associated from widening the sidewalk, and the slight increased runoff would drain to adjacent vegetated areas. In Beach Street where there would be pavement striping and replacement, drainage runoff to vegetated areas is considered infeasible due to existing ROW and existing roadway corridor infrastructure. Therefore, runoff in Beach Street would continue to flow and discharge based on existing drainage patterns in the roadway.

In Segment 9, runoff from new or replaced impervious trail surfaces would discharge to a proposed graded natural material swale on the northern or southern side of the trail. These drainage systems (e.g., swales, V ditches, French drains, pipes) would comply with County Design Criteria Standards, Section H, as follows: All drainage improvements shall be designed to convey a minimum 10-year storm. In addition, means of conveying flood overflows from the site would be per the 25-year storm return period. All runoff generated by the impervious trail surface would first drain to the proposed natural swales alongside the trail. Any trail-generated flows and off-site flows that exceed the capacity (i.e., overflows) of the proposed swales would be diverted to a proposed storm drainpipe system under the trail.

Any off-site flows that would be intercepted by existing or proposed storm drain infrastructure (e.g., catch basins, sidewalk underdrains, V ditches, French drains, swales) would be piped in the new storm drain system under the proposed trail to an outlet structure at an existing storm drain system or creek downstream. Comingling of off-site and trail runoff would be avoided where practically feasible. Stormwater treatment devices (e.g., gross solids removal device, hydrodynamic separators, trash screens, and flow through water quality treatment devices) could be installed, as determined appropriate by the City and/or County, with the proposed storm drain system to treat off-site flows before they ultimately discharge at a creek or ocean, improving water quality.

Both City (Storm Water Best Management Practices for Private and Public Development Projects, dated March 2014) and County (Design Criteria, December 2021 Edition) of Santa Cruz stormwater requirements do not consider trails as a “regulated project” or “development” if “where no other impervious surfaces are replaced or created, and built to direct stormwater runoff to adjacent vegetated areas.”

Rail Realignment and Utility Relocations and Installations

Existing rail realignment and utility relocations and proposed utility installations at the schematic design level include the following.

Rail Realignment. As described in Section 2.4.1, there would be the minor realignment of 1,670 linear feet of rail up to 7.5 feet southward, from approximately 500 feet west of 7th Avenue to approximately 1,100 feet east of 7th Avenue. This involves the removal of the railroad ties and other rail hardware (rail, tie plates, anchors) and installation of new Class III rail, consistent with the existing rail.

Storm Drain. Anticipated storm drain improvements include the following:

- Relocate and/or connect existing systems to proposed systems in Segments 8 and 9 as follows: 3rd Street/Beach Street intersection, SLR Trestle Bridge (eastern end), Hiawatha Avenue connection, Mott Avenue intersection, Seabright Avenue intersection, Murray Street (between Seabright Avenue and Woods Lagoon Railroad Bridge), East Harbor connection, 7th Avenue intersection, Live Oak Avenue connection, El Dorado Avenue connection
- Install a V ditch with down drains at the backs of proposed retaining walls to intercept upstream and slope drainage in Segment 9
- Install storm drain catch basins, pipes, and outlet structures (with outlet energy dissipation) along length of Segment 9

Irrigation. The extent of relocating existing irrigation systems is unknown at schematic design and would be clarified during final design and/or during construction, when the contractor is performing clear, grub, and excavate operations. Anticipated relocations include the following:

- Relocate existing irrigation along proposed sidewalk widening along Beach Street in Segment 8
- Relocate existing irrigation along proposed trail belonging to City, County, and/or State Parks in Segment 9

Traffic Signals. Anticipated traffic signal modifications include the following:

- Install new signal poles and arms and modify existing signal at Seabright Avenue in Segment 9
- Install rectangular rapid-flashing beacons at the 7th Avenue and 17th Avenue crossings in Segment 9

Lighting. Lighting would be installed as described in Section 2.4.1 with extensions from the existing electric system.

Excavation and Earth Movement

It is estimated that excavation necessary for construction of the Ultimate Trail Configuration and as-needed utility trench work would be up to 6 feet deep. Project construction would involve cut and fill slopes up to a maximum of 2:1. Preliminary estimates include 18,983 cubic yards (CY) of cut volume and 5,238 CY of import of native soil; therefore, an earthwork balance of cut and fill is unlikely.

A summary of construction information and assumptions based on the current design is provided in **Table 2-2**. The estimates for the East Harbor connection design option are provided in **Table 2-3**.

Construction Equipment and Staging

Construction equipment and vehicles could include backhoes, loaders, tractors, cranes, lifts, concrete trucks and pump, paving machine, compactors/rollers, and trucks for grading and materials delivery, import and export. Power tools could include jackhammers, air compressors, generators, concrete saws, power drills welding equipment, sandblasting equipment, painting equipment, power and impact wrenches, and the like.

Construction staging, equipment staging, and stockpiling would take place on existing disturbed or paved areas along the railroad ROW, at least 50 feet from drainages or waterways. Potential construction staging areas include vacant land in the following areas:

- City Parking Lot 18 (Pacific Avenue roundabout)
- Seabright Avenue/Watson Street parking lot
- Eaton Street (just after Murray Street Bridge)
- Simpkins Swim Center parking lot (outside Twin Lakes State Beach boundaries)
- 901 7th Avenue
- 2700 Brommer Street (County maintenance yard)

All equipment and materials would be stored, maintained, and refueled in designated portions of the staging areas in accordance with permit requirements. As such, there would be no staging in areas with sensitive biological resources or adjacent to drainages.

Table 2-2 Construction Estimates for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction Information	Trail Next to Rail Line (Ultimate Trail Configuration)
Construction Duration[a]	24 months
Construction/Alignment Length[b]	2.2 miles (0.6 mile Segment 8; 1.6 miles Segment 9)
Total Disturbance Area	3.0 acre
Pavement (New Impervious Surface)[c]	13,157 square yards
Bridges[d]	5,800 SF
Viaducts[e]	11,850 SF
Tree Removal[f]	381
Excavation and Drilling Depth	
Trail Excavation/Grading Depth[g]	Up to 6 feet
Drilled Hole Depth for Retaining Wall Soldier Piles	Up to 20 feet
Piling Depth for Viaducts	20 feet minimum
Earthwork Quantities[h]	
Excavation	18,983 CY
Embankment Construction/Fill	5,238 CY
Import and Export[i]	
Import	
Roadway Aggregate	1,640 CY
Asphalt	94,260 SF
Portland Concrete	22,850 SF
Export/Waste[j]	17,945 CY

Source: The construction information is provided by RRM Design in July 2022, based on the plans presented in **Appendix A** and subsequently refined.

[a] The estimated construction durations are based on rationale described in Sections 2.6.1, *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, and 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, respectively.

[b] The linear distance of the trail alignment varies slightly between the Ultimate Trail Configuration and Interim Trail, which has been reflected in these calculations. However, in general, the trail distance is identified as approximately 2.2 miles throughout the EIR.

[c] Estimated new impervious surface for the new paved (asphalt) trail, rounded to the nearest 100 square yard.

[d] The estimated bridge square footage includes the clear-span bridge at Pilkington Creek and the cantilever at Woods Lagoon Railroad Bridge.

[e] The estimated viaduct square footage includes the Leona Creek Viaduct and the Live Oak Viaduct.

Table 2-2 Construction Estimates for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction Information	Trail Next to Rail Line (Ultimate Trail Configuration)

[f] Tree removal estimates are based on the tree inventory (RRM 2022) and design plans (**Appendix A**) conducted by RRM Design.

[g] These are conservative estimates, measured vertically from existing ground to bottom of excavation.

[h] The excavation material would be used to construct embankment/fill, and no fill would be imported. For both the Ultimate Trail Configuration and Interim Trail, the current estimated earthwork quantities yield a volume of waste identified under "Export/Waste."

[i] The import materials would be used for paving the trail and identified trail connections. These estimates are independent of and have no direct correlation to the Earthwork Quantities identified above.

[j] The estimated export includes the remaining excavation material and hazardous waste (e.g., railroad ties) that are not used for embankment construction/fill. The railroad ties, as well as other rail hardware (rail, tie plates, anchors), would be removed for the minor realignment of 1,670 linear feet of rail to the south, from west of 7th to Leona Creek.

CY = cubic yard; SF = square feet

Table 2-3 Construction Estimates for East Harbor Connection Design Option

Construction Information	East Harbor Connection
Construction Duration	15 months
Estimated Total Disturbance Area	0.15 acre
Concrete Pavement (New Impervious Surface)	611 square yards
Trees Removed	15
General Quantities	
Excavation	4,660 CY
Embankment Construction/Fill	3,090 CY

CY = cubic yard; SF = square feet

Construction Vehicle Access

Construction truck activity and haul routes would be limited to arterial and collector roads where feasible. Temporary lane closures throughout the Project alignment are anticipated, and construction signage and a flagger would be present at these locations, as needed. Construction activities are not anticipated to result in any long-term road or lane closures.

Best Management Practices

The following best management practices will be identified in the construction bid documents and implemented during project construction to minimize dust, emissions, and erosion and to protect air quality, biological resources, and water quality.

AIR QUALITY AND WATER QUALITY PROTECTION

- Limit grading activities during periods of high wind (over 15 mph) or water for dust suppression.
- Water active construction areas as needed based on the activity, soil, and wind exposure.
- Apply soil stabilizers on inactive construction areas (disturbed lands unused for four consecutive days).
- Apply native hydro-seed or non-toxic binders to exposed areas after cut/fill operations.
- Maintain at least 2-foot freeboard in haul trucks, and cover all trucks hauling dirt, sand, or other loose materials.

- Cover inactive storage piles.
- Install perimeter protection (e.g., silt fence, fiber rolls) to prevent contaminated construction runoff from leaving the construction site and to protect adjacent waterways.
- Install project storm drain catch basin and inlet protection (e.g., inlet filters, fiber rolls, gravel bags).
- Implement additional measures identified in the Soil Management Plan to be prepared by the City, County, or their construction contractor.
    - A debris containment system would be installed under the existing Woods Lagoon Railroad Bridge and span beyond the edge of the proposed cantilever to ensure construction debris and materials do not enter the Santa Cruz Harbor. The debris containment device would be secured to the existing railroad bridge and would remain in place during all construction activities over the water.
    - Any painting required for the Project (e.g., path railings) would occur off site in certified and approved paint shops, and materials would be delivered to the project site ready for installation. Minor touchups would occur as necessary on site to ensure that the quality of the materials being used for construction of the Project was maintained.

BIOLOGICAL RESOURCES PROTECTION

- Minimize removal or disturbance of existing vegetation outside the footprint of project construction activities.
- Limit site access and parking, equipment storage, and stationary construction activities to the designated staging areas to the maximum extent feasible.
- Prior to staging equipment on site, clean all equipment caked with mud, soils, or debris from off-site sources to avoid introducing or spreading invasive exotic plant species.
- Position all stationary equipment such as motors, pumps, generators, and/or compressors over drip pans.
- If security fencing is installed around the construction site, allow for passage of wildlife to maintain a link between inland and coastal habitats, including stream corridors, during construction activities. Limit the use of plastic mesh safety fencing to prevent wildlife entrapment.
- Properly contain and remove all food trash that may attract predators into the work area and construction debris and trash from the work site on a regular basis.
- To the extent feasible, conduct tree removal between September 15 and January 31 (ideally between September 15 and October 15), so it is outside avian breeding season (from February 1 to September 15) and bat maternity roosting season (from May 1 to September 1). If it is determined not feasible, mitigation has been identified to protect nesting birds.

TRAFFIC CONTROL

- A traffic control plan shall be prepared and implemented. Construction truck activity and haul routes will be limited to arterial and collector roads where feasible. Construction signage and a flagger will be present at the location of any lane closure or substantial construction equipment or activities.

2.6.2 Optional First Phase: Trail on the Rail Line (Interim Trail)

As described above, this optional interim phase includes three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail. The information below applies to both parts unless otherwise noted.

Timing, Duration, Hours

Construction would occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. Additionally, construction could also start at 7:00 a.m., Monday through Friday, and occur on Saturdays with written approval from the City or County. There would be no construction on Sundays or national holidays.

Construction of the optional first phase Interim Trail is estimated to occur as follows. It is estimated by the RTC, City, and County that the Interim Trail could be in operation for approximately 25 years, recognizing this is an interim or temporary condition driven by freight activity, and it could be longer or shorter than estimated below for purposes of analysis.

1. Implementation of Interim Trail: 2023–2027 (4 years)
   - 2023–2025 – Complete environmental review, design, and ROW process
   - 2025–2027 – Trail construction
2. Demolition of Interim Trail and Rebuilding the Rail Line: 2056–2060 (4 years)
3. Construction of Ultimate Trail Configuration: 2053–2055 (years)

General Methodology

Like the Ultimate Trail Configuration, construction activities for Segment 8 would improve existing sidewalks, curb ramps, stairs, driveways, and bike lanes and thus be relatively minor.

In general, construction activities for Segment 9 would include excavation of material sources, clearing and grubbing, and tree removal; grading, retaining wall construction, drainage improvements, and placement of crushed aggregate base and paved surface; and revegetation, installation of signs, and other trail and safety-related features. There would be drilling associated with construction of the retaining walls but no pile driving.

The Project would be constructed in accordance with the recommendations included in the project Geotechnical Investigation Report (Pacific Crest Engineering 2021) and associated Technical Memorandum (Pacific Crest Engineering June 16, 2022 Rev 1), as well as any additional recommendations identified in the final Geotechnical Investigation to be prepared upon final project design, as applicable.

1) Implementation of the Interim Trail

The railroad tracks would be removed, and the multi-use trail would be constructed in generally the same location.

Removing the railroad tracks would follow the required Surface Transportation Board requirements for abandonment, railbanking, and track removal.[8] After the required administrative tasks, the

[8] Title 49, Subtitle B, Chapter X, Subchapter B, Part 1152 – Abandonment and Discontinuance of Rail Lines and Rail Transportation Under 49 U.S.C. 10903.

physical elements of track removal would entail (1) removing rail, ties, signage, and equipment, and (2) excavating and redistributing ballast on site where feasible, regrade, compact, and then cap with trail pavement. The aggregate base layer needs to be established for trail use because the current rail ballast would not be a suitable aggregate base layer for pavement because it does not meet gradation and compaction requirements.

If hazardous materials are identified through the planned soil testing, any hazardous soil would be disposed at an appropriate disposal facility.

The railroad ties, formally designated as treated wood waste by the California Department of Toxic Substances Control, would be transported and disposed in accordance with the alternative management standards established by the Legislature in Assembly Bill 1353 (2004), Treated Wood Waste Management in California.

There would be no permanent storage of hazardous ballast, ties, or other unregulated hazardous materials on site or on City/County or State Parks property.

Once the railroad tracks and ties are removed, the multi-use trail would be constructed in generally the same location with placement of crushed aggregate base and paved surface.

As described in Section 2.4.2 for the Interim Trail under *Trail Alignment*, there would be retaining walls, waterway crossings, roadway crossings, and roadway improvements.

Retaining Walls

There would be some retaining walls of various sizes to support the trail at specific locations along the alignment. Retaining wall types included and/or under consideration for design include 6-inch retaining curb, 8-inch retaining curb, and Caltrans 2018 Standard Plan Retaining Walls (Type 1, Type 1A, Type 5, and Type 6). Other retaining walls under consideration include steel soldier piles set into concrete drilled piles with either timber or concrete lagging.

Waterway Crossings

On the Santa Cruz Harbor crossing, FRP decking or asphalt would be placed on the rail line on the railroad bridge. No improvements (e.g., viaducts) are needed at the other waterway crossings, including Pilkington Creek, Leona Creek, and Stream 1545.

Roadway Crossings and Improvements

The roadway crossings at Mott Avenue, Seabright Avenue, 7th Avenue, and 17th Avenue would be similar to the Ultimate Trail Configuration.

Stormwater Drainage

Like the Ultimate Trail Configuration, in general, stormwater would surface flow from the new paved trail to the adjacent natural surfaces, and similar drainage improvements necessary to maintain existing overland flow patterns would be made in conjunction with trail construction.

Utility Relocations and Installations

Like the Ultimate Trail Configuration, storm drain, rail, traffic signal, lighting, and irrigation utility relocations and installations would take place along the length of the trail and at street intersections/crossings. Railroad crossing panels and signal equipment would be removed.

Excavation and Earth Movement

It is estimated that excavation necessary for construction of the Interim Trail configuration and as-needed utility trench work would be up to 6 feet deep. The Project would be constructed in accordance with the recommendations included in the project Geotechnical Investigation Report (Pacific Crest Engineering 2021) and associated Technical Memorandum (Pacific Crest Engineering June 16, 2022 Rev 1), as well as any additional recommendations identified in the final Geotechnical Investigation to be prepared upon final project design. These recommendations include but would not be limited to the following: Solider piles should be embedded into competent soil or bedrock and can be designed as a cantilever system or incorporate tie-backs.

The Project would involve cut and fill slopes up to a max slope of 2H:1V. Preliminary cut volume is estimated 5,085 CY, and preliminary import native soil is estimated at 2,078 CY. Based on these preliminary quantities, an earthwork balance is unlikely.

A summary of construction information and assumptions based on the current design is provided in **Table 2-4**.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Construction activities include removal of the Interim Trail, which would include demolishing and removing the asphalt paving throughout the trail alignment, fiberglass panels or asphalt at the Woods Lagoon Railroad Bridge crossing, retainer curbs, fencing, benches, and signage.

Rebuilding the rail line would include construction of the rail ballast, installation of railroad ties and tracks, and construction of concrete panel railroad crossings, signals, and equipment. The rail line would be constructed generally in the existing alignment but may be realigned in some locations. The rail line would be built in accordance with American Railway Engineering and Maintenance of Way, Federal Railroad Administration, and California Public Utility Commission requirements, as applicable. Additionally, the rail would be constructed such that stormwater flows to the existing drainage system or natural material swales that were added for the Interim Trail (Part 1), which would be modified as necessary to retain similar drainage patterns.

A summary of construction information and assumptions based on the current design is provided in **Table 2-4**.

3) Construction of Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration would be the same as that described in Section 2.6.1, *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. A summary of construction information and assumptions based on the current design is provided in **Table 2-4**.

Construction Equipment and Staging

Construction equipment and staging would be the same as that described in Section 2.6.1 for the Ultimate Trail Configuration.

Construction Vehicle Access

Construction vehicle access would be the same as that described in Section 2.6.1 for the Ultimate Trail Configuration.

Best Management Practices

Best management practices during construction would be the same as that described in Section 2.6.1 for the Ultimate Trail Configuration.

Table 2-4 Construction Estimates for Optional First Phase: Trail on the Rail Line (Interim Trail)

Construction Information	1) Implementation of the Interim Trail	2) Demolition of the Interim Trail and Rebuilding the Rail Line	3) Construction of Ultimate Trail Configuration
Construction Duration[a]	24 months	48 months	24 months
Construction/Alignment Length[b]	2.2 miles	2.2 miles	2.2 miles
Total Disturbance Area	3.5 acres	3.5 acres	3 acres
Pavement (New Impervious Surface)[c]	16,910 square yards	N/A	13,157 square yards
Bridges[d]	N/A	N/A	5,800 SF
Viaducts[e]	N/A	N/A	11,850 SF
Tree Removal[f]	124	0	280
Excavation and Drilling Depth			
Trail Excavation/Grading Depth[g]	Up to 6 feet	Up to 6 feet	Up to 6 feet
Drilled Hole Depth for Retaining Wall Soldier Piles	N/A	N/A	Up to 20 feet
Earthwork Quantities[h]			
Excavation	4,900 CY	13,500 CY	18,983 CY
Embankment Construction/Fill	2,054 CY	2,000 CY	5,238 CY
Import and Export[i]			
Roadway Aggregate	2,164 CY	2,164 CY	1,640 CY
Asphalt	130,075 SF	130,075 SF	94,260 SF
Portland Concrete	19,210 SF	19,210 SF	22,850 SF
Export/Waste[j]	13,600 CY	11,500 CY[k]	17,945 CY

Source: The construction information is provided by RRM Design in July 2022, based on the plans presented in **Appendix A** and subsequently refined.

[a] The estimated construction durations are based on rationale described in Sections 2.6.1 and 2.6.2, respectively.

[b] The linear distance of the trail alignment varies slightly between the Ultimate Trail Configuration and Interim Trail, which has been reflected in these calculations. However, in general, the trail distance is identified as approximately 2.2 miles throughout the EIR.

[c] Estimated new impervious surface for the new paved (asphalt) trail, rounded to the nearest 100 square yard.

[d] The estimated bridge square footage includes the clear-span bridge at Pilkington Creek and the cantilever at Woods Lagoon Railroad Bridge.

[e] The estimated viaduct square footage includes the Leona Creek Viaduct and the Live Oak Viaduct.

[f] Tree removal estimates are based on the tree inventory (RRM 2022) and design plans (**Appendix A**) conducted by RRM Design.

[g] These are conservative estimates, measured vertically from existing ground to bottom of excavation.

[h] The excavation material would be used to construct embankment/fill, and no fill would be imported. For both the Ultimate Trail Configuration and Interim Trail, the current estimated earthwork quantities yield a volume of waste identified under "Export/Waste."

[i] The import materials would be used for paving the trail and identified trail connections. These estimates are independent of and have no direct correlation to the Earthwork Quantities identified above.

[j] The estimated export includes the remaining excavation material and hazardous waste (e.g., railroad ties) that are not used for embankment construction/fill. The railroad ties, as well as other rail hardware (rail, tie plates, anchors), would be removed to accommodate the Interim Trail.

[k] This assumes this material will not be used for rail or trail construction following removal of the Interim Trail.

CY = cubic yard; SF = square feet

2.7 Required Permits and Approvals

The anticipated required permits and approvals for the Project are listed in **Table 2-5**.

For CEQA compliance, the City as lead agency is responsible for certifying the EIR and then discretionary approvals associated with the portion of the Project in their jurisdiction. When a project extends through multiple jurisdictions, CEQA requires that there is only one lead agency.

Responsible agencies, including the County and RTC, do not have to certify the EIR on their own but would rely on the EIR to carry out discretionary approvals related to the Project in their respective jurisdictions and cite the certified EIR as the CEQA clearance.

Table 2-5 Anticipated Approvals, Permits, and Agreements Required for Proposed Project

	Approvals, Permits, and Agreements
City of Santa Cruz, Lead Agency	EIR Certification Project Approval in incorporated City of Santa Cruz Design Permit Slope Modification Variance Permit Heritage Tree Removal Permit Watercourse Development Permit
County of Santa Cruz	Project Approval in unincorporated County area Tree Permit Grading Permit Riparian Exception Permit
Santa Cruz County RTC	Cooperative Agreement for Construction with City and County Right of Entry for Construction with City and County
California Coastal Commission	Consolidated Coastal Development Permit for City and County
California Public Utilities Commission	New public rail crossing approval GO88-B Permit to modify an existing crossing
California Regional Water Quality Control Board	Waste Discharge Requirements National Pollutant Discharge Elimination System permit Construction General Permit/Stormwater Pollution Prevention Plan
California Department of Fish and Wildlife	Section 1602 Streambed Alteration Agreement
California State Parks	Easement for trail connection at Simpkins Swim Center Section 4(f) Memo approval
National Park Service	Section 6(f) Memo approval
U.S. Fish and Wildlife Service	Section 7 or 10 consultation under the Endangered Species Act and incidental take authorization, if the monarch butterfly becomes federally listed
Additional Requirements for Optional First Phase: Interim Trail	
Surface Transportation Board	Approval for Abandonment of freight service

EIR = environmental impact report; RTC = Santa Cruz County Regional Transportation Commission

This page intentionally left blank.

3 Environmental Impact Analysis

Chapter 2, *Project Description*, includes a description of physical and operational features of the **Coastal Rail Trail Segments 8 and 9 Project** (Project).

This chapter is divided into sections for the following environmental or resource topics based on the scoping process described in Chapter 1, *Introduction*:

1. Aesthetics
2. Air Quality
3. Biological Resources
4. Cultural Resources
5. Geology and Soils
6. Greenhouse Gas Emissions/Climate Change
7. Hazards and Hazardous Materials
8. Hydrology and Water Quality
9. Land Use and Planning
10. Noise
11. Public Safety and Services
12. Transportation
13. Tribal Cultural Resources
14. Utilities and Service Systems
15. Effects Found to be Less than Significant

Approach to Project Analysis

This chapter includes the environmental impact analysis for the ***Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*** and the ***Optional First Phase: Trail on the Rail line (Interim Trail)*** at an equal level of detail, as described in Chapter 1.

As described in Section 2.5, *Project Operation and Maintenance*, the Project does not include rail service of any type, and there would be no other changes in the rail corridor as a result of the Project other than those described in Section 2.4, *Project Characteristics*, as they relate to implementation of the Project (specifically, *Rail Realignment* in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*). Therefore, the potential environmental impacts or benefits of rail service are not included in this analysis.

The Project alternatives developed during the scoping process, as well as the No Project alternative, are evaluated in Chapter 5, *Project Alternatives*.

As described in Chapter 1, this analysis includes relevant information from the Monterey Bay Sanctuary Scenic Trail (MBSST) Master Plan Environmental Impact Report (EIR) (RTC 2013) and additional information specific to the Project.

Existing Conditions and Regulatory Setting

In each resource section, the *Existing Conditions* discussion describes the existing or baseline conditions for the resources in the study area; the *Regulatory Setting* discussion describes applicable plans, policies, and regulations. The study area varies depending on the resources. The study area is the same as the Project alignment for some resources and is larger for other resources, such as air quality.

Impacts and Mitigation Measures

The *Methodology and Significance Thresholds* discussion for each environmental topic describes the methodology used to identify potential impacts and the criteria used to determine the significance of those potential impacts. A "significant effect" is defined by the *California Environmental Quality Act (CEQA) Guidelines*, Section 15382, as the following:

> A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.

For each potential impact, one of the following significance determinations is made and presented in bold:

- **No Impact.** The Project or any Project alternative would have no adverse effect at all on environmental conditions or would have a beneficial effect by reducing the severity of existing environmental problems or hazards.
- **Less than Significant.** An impact that may be adverse but does not exceed the identified significance threshold levels and does not require mitigation measures. Although CEQA does not require the formulation or adoption of mitigation measures for less than significant effects, the City of Santa Cruz (City), in approving the Project or any Project alternative, could formulate conditions of approval that could further lessen the environmental effect.
- **Less than Significant with Mitigation.** An impact that can be reduced to below the significance threshold level with the adoption of identified mitigation measures. The identification of an impact that would require mitigation would require the City to adopt findings pursuant to Section 15091 of the *CEQA Guidelines* as part of its process for approving either the Project or any Project alternative that would also cause such impacts.
- **Significant and Unavoidable.** An impact that cannot be reduced to below the significance threshold level, even with the adoption of any recommended mitigation measures. The identification of a significant and unavoidable impact would require the City to adopt a Statement of Overriding Considerations pursuant to Section 15093 of the *CEQA Guidelines,* if the City chooses to approve the Project or any Project alternative that would also result in such impacts.

The thresholds used to determine the significance of a potential impact differ based on the environmental topic and largely follow Appendix G of the *CEQA Guidelines*. Appendix G provides a sample Initial Study checklist that includes a number of factual inquiries for each required environmental topic. Notably, lead agencies are under no obligation to use these inquiries in fashioning thresholds of significance (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068). Rather and with few exceptions, "CEQA grants agencies discretion to develop their own thresholds of significance" (*CEQA Guidelines*, Section 15064[d]). Even so, it is a common practice for lead agencies to use the language from the inquiries set forth in Appendix G to

fashion thresholds. The City has done so in this EIR, as described under the *Significance Thresholds* discussion in each section of this chapter.

In the *Project Impact Analysis* discussion, the threshold is presented first, followed by the potential impacts associated with that threshold. For each potential impact, a discussion of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* is followed by a discussion of the *Optional First Phase: Trail on the Rail line (Interim Trail)*. Each discussion concludes with the significance determination (in bold) and any required mitigation measures. In most cases, identified mitigation measures apply to both the Ultimate Trail Configuration and the optional Interim Trail. If any mitigation measures apply exclusively to either the Ultimate Trail Configuration or the Interim Trail, it is indicated in parentheses at the end of the mitigation measure statement. In cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed and evaluated as a secondary impact.

Many of the mitigation measures identified for Project impacts were originally discussed in the MBSST Network Master Plan EIR (RTC 2013). As a program-level EIR, the MBSST Network Master Plan EIR focuses on the broad changes to the environment that would be expected to result from implementation of the entire 50-mile MBSST Network. Accordingly, the mitigation measures identified in the MBSST Network Master Plan EIR are necessarily broad and general. Therefore, to ensure that the measures effectively mitigate potential impacts of the Project (Segments 8 and 9 of the 20-segment MBSST Network), the analysts considered whether the MBSST Network Master Plan EIR mitigation measures, by themselves, are sufficient to address the site-specific impacts of Segments 8 and 9 as identified in this document. In many instances, the analysts either proposed refinements, additional detail, or other changes to the MBSST Network Master Plan EIR mitigation measures, or they have proposed new additional mitigation measures to complement those taken from the MBSST Network Master Plan EIR. In individual sections, footnotes identify the MBSST Network Master Plan EIR mitigation measures that have been included verbatim or that have been refined or modified to address site-specific concerns associated with Segments 8 and 9. New mitigation measures do not have footnotes.

Finally, if the impact analysis identified a beneficial effect of the Project, such as reduced vehicular emissions due to use of the trail as an alternative mode of transportation, this is acknowledged in the impact discussion.

Approach to Cumulative Impacts

The cumulative impact analysis for each issue area is presented in Chapter 4, *Other CEQA-Required Discussions*. The term “cumulative impacts” refers to “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (*CEQA Guidelines*, Section 15355).

A cumulative impact can result from the combination of two or more individually significant impacts or the combination of two or more impacts that are individually less than significant but constitute a significant change in the environment when considered together. To analyze a proposed project’s contribution to cumulative impacts, CEQA requires the lead agency to identify past, present, and probable future projects in the vicinity of the proposed project, summarize their effects, identify the incremental contribution of the proposed project to any significant cumulative impacts occurring in the project region, and recommend mitigation measures as appropriate (*CEQA Guidelines*, Section 15130[b]). Mitigation measures should focus on any cumulatively considerable incremental contribution from the proposed project or alternative to any significant cumulative effect created by

the past, present, and probable future projects, together with the proposed project or alternative (*CEQA Guidelines*, Section 15130[a][3]; see also *CEQA Guidelines*, Section 15126.2[a][4]).

For each resource topic, cumulative impacts were determined in the following manner:

1. Determine whether there is a significant cumulative impact under future conditions with the Project. If yes, then;
2. Determine if the Project would or would not make a cumulatively considerable (i.e., significant) contribution to the identified significant cumulative impact.

The cumulative impacts for all the resource topics are summarized in Section 4.1, *Cumulative Impact Analysis*, in Chapter 4, which includes additional information on the methodology.

Summary of Impacts and Mitigation Measures

At the beginning of each resource section, a summary table provides the impacts and mitigation measures for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)*. The *Executive Summary* at the beginning of this EIR summarizes all impacts and mitigation measures.

3.1 Aesthetics

This section presents a discussion of existing visual resources along the Project corridor and an evaluation of potential impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* on those resources. A summary of the potential impacts is presented in **Table 3.1-1**.

Table 3.1-1 Summary of Project Impacts on Aesthetics[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
AES-1. The Project would have an adverse effect on scenic resources and vistas through the removal of mature trees.	Significant and Unavoidable	None Available	Significant and Unavoidable
AES-2. The Project would be inconsistent with policies that pertain to tree and vegetation removal.	Significant and Unavoidable	None Available	Significant and Unavoidable
AES-3. The Project would not adversely affect daytime or nighttime views.	Less than Significant	None Required	Less than Significant
Beneficial Effects: The Project would facilitate public access to viewing points of scenic vistas in both segments of the Project corridor.			

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.1.1 Existing Conditions

Regional Setting

The Project corridor extends along the Santa Cruz County Regional Transportation Commission-owned Santa Cruz Branch Rail Line corridor in central Santa Cruz County (County), partially within the City of Santa Cruz (City) and partially in the unincorporated Live Oak area. Largely built out, the City is on the northern edge of Monterey Bay and bounded on the southwest by the Pacific Ocean and on the inland side by the forested Santa Cruz Mountains beyond which extends the Silicon Valley and greater San Francisco Bay Area to the east and north. The eastern part of Segment 9 is in unincorporated Santa Cruz County and includes a trail connection to Simpkins Swim Center and upper Twin Lakes State Beach, which is under the jurisdiction of California State Parks.

The primary scenic resources in the County are ocean views, agricultural fields, wooded forests, open meadows, and mountain hillside views (Santa Cruz County 1994). The City has identified the Santa Cruz Beach Boardwalk (Boardwalk), the beach, the Pacific Ocean, the San Lorenzo River (SLR), the Santa Cruz Mountains, and the Santa Cruz Small Craft Harbor as visual landmarks that contribute significantly to the City's visual character (City of Santa Cruz 2012).

Project Corridor Setting

The Project corridor is in an urbanized area of Santa Cruz. The western extent is near the Santa Cruz Main Beach and Boardwalk and close to downtown Santa Cruz, so it is a heavily populated area with residents and tourists. The Project corridor traverses a mix of residential, commercial, and light industrial land uses until it reaches the Santa Cruz Harbor, where it continues east along the northern edge of Twin Lakes State Beach and ends in largely urbanized development at 17th Avenue

(refer to **Figure 2-1** in Chapter 2, *Project Description*, and **Appendix A.1**). Segment 9 of the Project alignment features mature, landscaped and naturally occurring, native and non-native plants, shrubs, and trees throughout the trail alignment. Low- and medium-density residential development and parks/open space occur alongside denser, industrial, and commercial development, such that the landscape directly surrounding the Project alignment is developed but relatively densely vegetated.

Visual Character and Quality

The current visual character in the Project corridor is consistent with urban coastal development. At the western end of the alignment along Beach Street, one- to four-story commercial buildings line the north side of the street along with surface parking lots. Some residential development occurs on the streets north of Beach Street, including single- and multi-family homes with a mix of architectural styles and periods of development. Main Beach and Boardwalk recreational facilities (e.g., rides, rollercoasters) mingle with colorful, multi-story buildings that house eateries, an arcade, miniature golf, and other businesses that serve Boardwalk visitors along the Boardwalk area on the south side of Beach Street. The visual quality is high along this area, even where the ocean is not visible, because it is colorful, unified, and consistent with visitor-serving development in a coastal city.

East of the SLR Trestle Bridge and along much of Segment 9, trees and wooded areas enhance scenic vistas of the Pacific Ocean and/or adjacent coastal development either by providing views of healthy and mature trees as part of the scenic landscape or by providing vegetative screening of buildings or development that could be considered by some viewers to have low aesthetic quality. Segment 9 traverses residential, industrial, and commercial development directly adjacent to the existing railroad alignment. At intersections, the railroad and other transportation components create a high degree of visual clutter. The visual quality through these portions of the Project corridor is moderate to low, with the density of mature tree canopy largely dictating the visual quality as the industrial and commercial architecture is simple, rectangular, with metal or stucco exteriors, and not visually remarkable. In the portion of Segment 9 that traverses through upper Twin Lakes State Beach, the visual character of the rail corridor is high with mature, natural vegetation and landscaping although the corridor is not visible from most public roadways. In the eastern portion of the alignment, visual character remains consistent with urban coastal development, and denser vegetation surrounding the trail enhances nearby scenic views.

Overall, the Project corridor has a moderate to high visual quality and level of intactness.[1] Segment 8 is consistent with an urbanized California seaside community with a mix of architecture situated along the beach, colorful exterior finishes, and artistic signage and periodic views of the ocean. Segment 9 is also consistent with a mix of residential, commercial, industrial, and open space uses with a substantial amount of mature natural vegetation and landscaping. The nearby mountains and ridgelines are also visible periodically along the Project corridor.

[1] Intactness is the integrity of visual features in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.

Scenic Resources and Vistas

The Project corridor offers view points for several scenic resources and vistas.[2] Views along Segment 8 include the Santa Cruz Wharf, Santa Cruz Main Beach, Boardwalk, Pacific Ocean, and SLR. Views along Segment 9 include the Santa Cruz Small Craft Harbor, Pacific Ocean, and Twin Lakes State Beach.

State Route (SR-) 1 is a major north-south highway that traverses most of the Pacific coastline. At various points along its extent, SR-1 is either officially designated as a state scenic highway or is eligible for designation (Caltrans 2019). In the County, SR-1 is designated as the Cabrillo Highway and is considered eligible for state scenic highway designation. The closest portion of the Project corridor to SR-1 is 1.5 miles south of SR-1. No portion of the Project corridor is within or visible from a designated state scenic highway.

Light and Glare

Since the Project area is urbanized and largely built out, sources of existing lighting include street lighting and light emitted from existing buildings/structures (residential, recreational, commercial, industrial). The headlights of motor vehicles traveling on the roadways throughout the corridor also produce light and glare. There is much less existing lighting along the portion of Segment 9 extending along upper Twin Lakes State Beach, where there is dense vegetation and no lighting in the open space on the south side of the corridor, and interspersed residential development on the north side. The Project corridor itself does not currently contribute to night lighting or daytime glare within the Project vicinity.

3.1.2 Regulatory Setting

This section describes the state and local plans, policies, and laws relevant to aesthetics for the Project. There are no relevant federal regulations regarding aesthetics applicable to the Project.

State

California Coastal Act

The California Coastal Act, enacted in 1976, establishes procedures for the review of proposed developments in the Coastal Zone and policies for the protection of coastal resources and public access to the coastline. The following Coastal Act regulations in the Public Resources Code pertain to aesthetics.

SECTION 30251

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas, such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government, shall be subordinate to the character of its setting.

[2] A scenic vista can be defined as a publicly accessible view point that provides expansive views of a highly valued landscape (www.lawinsider.com), such as views of the ocean and mountains.

SECTION 30253

New development shall do all of the following:

(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard

(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs

(c) Be consistent with requirements imposed by an air pollution control district or the state Air Resources Board as to each particular development

(d) Minimize energy consumption and vehicle miles traveled

(e) Where appropriate, protect special communities and neighborhoods that, because of their unique characteristics, are popular visitor destination points for recreational uses

Local

Santa Cruz County General Plan and Local Coastal Program

The Conservation and Open Space Element of the Santa Cruz County General Plan and Local Coastal Program includes objectives and policies to protect visual resources (Santa Cruz County 1994). Key policies relevant to the Project are listed below.

- **Policy 5.10.2, Development within Visual Resource Areas.** Recognize that visual resources of Santa Cruz County possess diverse characteristics and that the resources worthy of protection may include, but are not limited to, ocean views, agricultural fields, wooded forests, open meadows, and mountain hillside views. Require projects to be evaluated against the context of their unique environment and regulate structure height, setbacks and design to protect these resources consistent with the objectives and policies of this section.
- **Policy 5.10.3, Protection of Public Vistas.** Protect significant public vistas as described in policy 5.10.2 from all publicly used roads and vista points by minimizing disruption of landform and aesthetic character caused by grading operations, timber harvests, utility wires and poles, signs, inappropriate landscaping and structure design. Provide necessary landscaping to screen development which is unavoidably sited within these vistas.
- **Policy 5.10.4, Preserving Natural Buffers.** Preserve the vegetation and landform of natural wooded hillsides which serve as a backdrop for new development. Also comply with policy 8.6.6 regarding protection of ridgetops and natural landforms.
- **Policy 5.10.6, Preserving Ocean Vistas.** Where public ocean vistas exist, require that these vistas be retained to the maximum extent possible as a condition of approval for any new development.
- **Policy 5.10.7, Open Beaches and Blufftops.** Prohibit the placement of new permanent structures which would be visible from a public beach, except when allowed on existing parcels of record, or for shoreline protection and for public beach access. Use the following criteria for allowed structures:
  - (a) Allow infill structures (typically residences on existing lots of record) where compatible with the pattern of existing development.
  - (b) Require shoreline protection and access structures to use natural materials and finishes to blend with the character of the area and integrate with the landform.

In addition, Policy 5.10.10 designates scenic roads and highways in the County, and requires that public vistas from these roads be afforded the highest level of protection. There are no roadways included within Policy 5.10.10 that could offer views of the Project corridor.

Santa Cruz County Municipal Code

Chapter 13.20.130 (Design criteria for Coastal Zone developments) of the County's Municipal Code outlines design criteria for projects sited anywhere in the Coastal Zone. Criteria relevant to the Project include the following:

1. **Visual Compatibility.** All new development shall be sited, designed, and landscaped to be visually compatible and integrated with the character of surrounding neighborhoods or areas.
2. **Minimum Site Disturbance.** Grading, earthmoving, and removal of major vegetation shall be minimized. Developers shall be encouraged to maintain all mature trees over 6 inches in diameter except where circumstances require their removal, such as obstruction of the building site, dead or diseased trees, or nuisance species. Special landscape features (rock outcroppings, prominent natural landforms, tree groupings) shall be retained.
3. **Ridgeline Development**. Structures located near ridges shall be sited and designed not to project above the ridgeline or tree canopy at the ridgeline. Land divisions that would create parcels whose only building site would be exposed on a ridgetop shall not be permitted.
4. **Landscaping.** When a landscaping plan is required, new or replacement vegetation shall be compatible with surrounding vegetation and shall be suitable to the climate, soil, and ecological characteristics of the area. The County's adopted landscape criteria shall be used as a guide.
5. **Fences, walls, and hedges**. Fences, walls, and hedges shall be sited and designed so that they do not block significant public views and so that they do not significantly adversely impact significant public views and scenic character.

The County's Municipal Code, Chapter 13.10, outlines zoning regulations and other regulations governing scenic quality, and Chapter 13.11 imposes requirements for site, architectural, and landscape design review. The County's Municipal Code, Section 13.11.074(D), includes lighting design requirements for sites and buildings, and Section 9.70.320 includes lighting requirements related to street and road safety.

City of Santa Cruz General Plan

The Community Design Element of the City's General Plan includes policies and actions to protect visual resources (City of Santa Cruz 2011). Key policies relevant to the Project are listed below:

- **Policy CD1.1.** Preserve natural features that visually define areas within the city.
- **Policy CD1.2.** Ensure that the scale, bulk, and setbacks of new development preserve important public scenic views and vistas.
- **Policy CD1.3.** Ensure that development is designed to be in harmony with natural topography and vegetation.
- **Policy CD1.4**. Ensure that development adjacent to open space lands maintains visual and physical connections to that open space.
- **Policy CD1.5.** Ensure that new development adjacent to the San Lorenzo River relates to the river in its design.

- **Policy CD2.1.** Protect and enhance the distinctive physical and design characteristics of neighborhoods and districts throughout the city.
- **Policy CD3.1.** Develop and maintain physical and visual linkages between key areas in the city.
- **Policy CD3.2.** Ensure that the scale, bulk, and setbacks of new development preserve public views of city landmarks where possible.
- **Policy CD3.4.** Encourage new development to incorporate "universal design" principles.
- **Policy CD4.3.** Ensure attractive, functional, and appropriate landscaping throughout the city.

City of Santa Cruz Municipal Code

Section 24.08.410 of the City's Municipal Code outlines requirements for design review, and Chapter 24.12 defines community design criteria that govern visual character.

Santa Cruz Rail Trail Arts Master Plan

The Santa Cruz Rail Trail Arts Master Plan is a comprehensive document that illustrates the vision for public art along the future rail with trail corridor that runs through the City of Santa Cruz jurisdiction, next to the existing railroad line (City of Santa Cruz 2018). The Santa Cruz Rail Trail Arts Master Plan contains goals and objectives for the Master Plan and identifies 25 art opportunity areas along the rail trail, with detailed explanations for each individual art opportunity.

Art opportunity sites along Segment 8 include Gateway 4: The Trestle and Corridor 7: The Urban Wharf and Boardwalk. Art opportunity sites along Segment 9 include Corridor 8: The Murray Street Industry Corridor, Corridor 9: The Murray Street Bridge Corridor, and Gateway 5: Santa Cruz City Limits Part East. The Santa Cruz Rail Trail Master Plan describes the setting for each individual art opportunity and potential constraints for each site and steps for implementation, phasing of art along the trail in the City of Santa Cruz, and best practices for public art.

3.1.3 Methodology and Significance Thresholds

Methodology

The assessment of impacts to scenic vistas, scenic resources, and visual character involves qualitative analysis that is inherently subjective in nature. Different viewers react to viewsheds and aesthetic conditions differently. Visual or aesthetic resources generally are defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Depending on the extent to which a project's presence would alter the perceived visual character and quality of the environment, a visual or aesthetic impact may occur. This analysis incorporates findings from the Visual Impact Memorandum prepared for the Coastal Rail Trail Segments 8 and 9 (Rincon 2022).

This analysis compares existing visual conditions along the Project corridor to those anticipated after implementation of the Project. The Project area was observed and photographed along with its surrounding context. The trail design plans in **Appendix A**, as well as two visual renderings, were analyzed to determine aesthetic impacts of the Project. Additionally, six representative key view points for scenic vistas were identified along the Project corridor. Visual impacts were analyzed at each of the following key view point locations:

- Key View Point 1: Beach Street at Pacific Avenue Roundabout
- Key View Point 2: Intersection of Seabright Avenue at Murray Street

- Key View Point 3: Santa Cruz Harbor from Murray Street Bridge
- Key View Point 4: Eaton Street looking north down 6th Avenue
- Key View Point 5: 7th Avenue looking south
- Key View Point 6: 17th Avenue looking south

Figure 3.1-1 illustrates the locations of the six key view points and the two renderings prepared for the Project at the Pilkington Creek crossing and Simpkins Swim Center.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of aesthetics and the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For purposes of this EIR, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Have a substantial adverse effect on a scenic resource or vista.

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

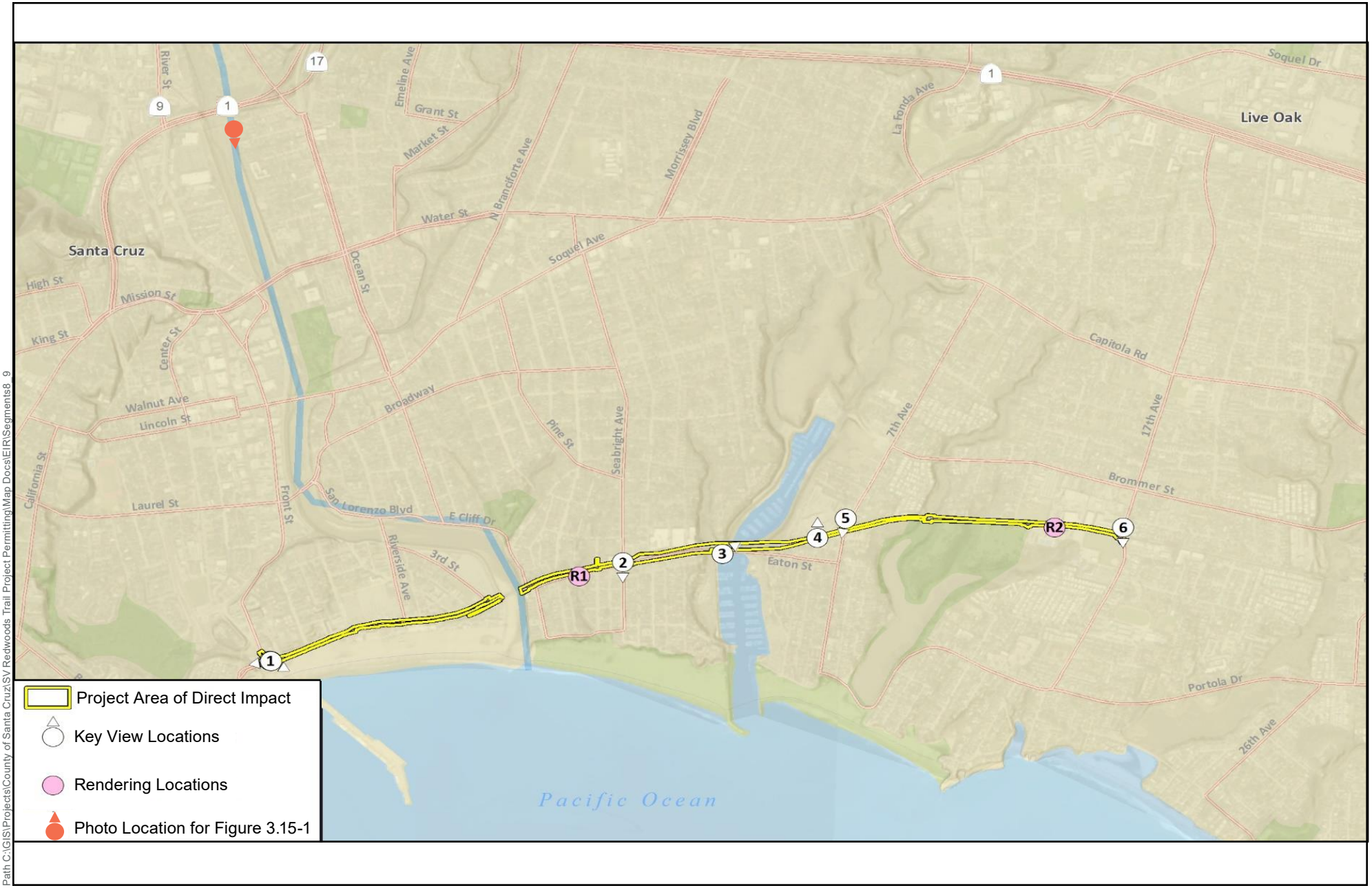
C. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site or its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.

D. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

In applying these thresholds to the impact analysis below, the City is concerned only with visual impacts from public views and not from private views, which is common industry practice. The City has discretion to make this distinction and does so because requiring mitigation for impacts to purely private views would give private landowners a kind of power over land uses on adjacent or nearby properties that they do not enjoy under California law (refer to *Mira Mar Mobile Community v. City of Oceanside* [2004] 119 Cal.App.4th 492-493, quoting *Wolford v. Thomas* [1987 190 Cal.App.3d 347, 358, for the proposition that "California landowners do not have a right of access to air, light and view over adjoining property").

Regarding Threshold A, a scenic resource or vista is defined as a publicly accessible view point that provides views of high visual quality or highly valued landscape. Visual quality and value are subjective based on the viewer's perception. It is reasonable to assume that most viewers consider views of the ocean and mountains to be high quality. While some viewers may not like these more distant views blocked by intervening trees and vegetation, many viewers consider mature trees and natural vegetation to enhance these views and create localized high visual quality. Therefore, given the subjectivity of this analysis and to provide for a conservative analysis, mature trees and natural vegetation are considered to contribute to scenic resources and vistas.

Regarding Threshold B, the Project corridor is not visible from a state scenic highway and thus would not impact scenic resources visible from a state scenic highway. Therefore, Threshold B was found to have no impact and is discussed in Section 3.15, *Effects Found to be Less than Significant*.



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

N

0 0.2 0.4

Miles

Figure 3.1-1

Key Viewpoint and Rendering Locations

Coastal Rail Trail Segments 8 and 9

Regarding Threshold C, the Project corridor and surrounding area are considered an urbanized area, whereby the focus of the analysis would be conflicts with applicable zoning and other regulations governing scenic quality. To provide a more conservative analysis, the County's General Plan, County's Local Coastal Program, and the City's General Plan were also considered for policy instruction relative to visual resources and design policy.

3.1.4 Project Impact Analysis

Threshold A:	Have a substantial adverse effect on a scenic vista.

Impact AES-1 THE PROJECT WOULD HAVE AN ADVERSE EFFECT ON SCENIC RESOURCES AND VISTAS THROUGH THE REMOVAL OF MATURE TREES. (ULTIMATE TRAIL CONFIGURATION: SIGNIFICANT AND UNAVOIDABLE; OPTIONAL INTERIM TRAIL: SIGNIFICANT AND UNAVOIDABLE)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

During the anticipated 24-month construction period, the Project would temporarily degrade scenic views from public locations including Beach Street, the Boardwalk, Murray Street, and the Santa Cruz Harbor. East of the Santa Cruz Harbor would be sporadic views of the Project corridor at the 7th Avenue and 17th Avenue crossings and from the trails in upper Twin Lakes State Beach and the Simpkins Swim Center. Project construction would be noticeable, especially to motorists and bicyclists along Beach Street and Murray Street, but would not highly disrupt the visual environment of the area. Project construction would expose surfaces, construction debris, equipment, and truck traffic to nearby viewers. Most of the trail alignment would be at-grade, with minor grading required. Construction of new sidewalks and the driveways they would cross would require equipment to remove curbs and concrete and concrete trucks that would deliver materials to the site, along with equipment to perform minor grading.

Staging areas needed for construction would be situated to avoid visual impacts on existing mature vegetation, where feasible. Construction equipment and materials stored at staging areas within the rail corridor could be visible as foreground features from public view points along Murray Street, Beach Street, and the SLR Trestle Bridge. Once the Project is completed, construction equipment and materials that would result in temporary disturbance of views would be removed. Viewers such as pedestrians, bicyclists, and motorists would only experience short durations of visual impacts from temporary construction activities. The visual impacts of construction of the Project would be temporary and minor. The overall visual impact of the project construction period would be low, and impacts to scenic vistas would be **less than significant**. No mitigation is required.

Operation

View Points

Along Segment 8 of the Project corridor, key view points provide public views and scenic vistas of the Pacific Ocean, surrounding beaches, and Boardwalk. Key view points along Segment 9 provide public views and scenic vistas of the Santa Cruz Harbor, mature vegetation, and urban coastal development. The six key view points shown on **Figure 3.1-1** are considered representative but not necessarily all inclusive. The following analysis identifies potential impacts that would occur to each

key view point as a result of the Project and whether the scenic vista would be adversely affected by Project activities.

KEY VIEW POINT 1: BEACH STREET AT PACIFIC AVENUE ROUNDABOUT

Key View Point 1 is located along Beach Street, at the Pacific Avenue roundabout, and provides panoramic scenic vistas of the Pacific Ocean (Monterey Bay), Santa Cruz Wharf, and Santa Cruz Main Beach in Segment 8. Photographs of Key View Point 1 are provided on **Figure 3.1-2**. The Project would add a bicycle lane, sidewalk, and crossing improvements at the Pacific Avenue/Beach Street roundabout. These improvements would be at-grade and would not impact existing scenic vistas. The Project would improve overall scenic quality through street repairs and curb replacement and would not include activities or features that degrade the scenic vista of the Pacific Ocean and beach.

KEY VIEW POINT 2: INTERSECTION OF SEABRIGHT AVENUE AT MURRAY STREET LOOKING SOUTH

Key View Point 2 is located at the intersection of Seabright Avenue and Murray Street, as shown on **Figure 3.1-3**, and provides a scenic vista of coastal urban development and the distant Pacific Ocean. The Project would include construction of improvements such as sidewalks, curbs, and pedestrian crossings at the intersection. Once past the roadway crossing, fencing would be installed as needed between the existing rail tracks and the proposed trail. Project improvements would be parallel to and at the same grade as the existing rail alignment; thus, the Project would not substantially alter scenic quality of vistas experienced from Key View Point 2.

KEY VIEW POINT 3: VIEWS OF SANTA CRUZ HARBOR FROM MURRAY STREET BRIDGE

Key View Point 3 is located along the Murray Street Bridge and provides views of scenic vistas of the upper Santa Cruz Harbor to the north and the lower Santa Cruz Harbor as it opens to Monterey Bay to the south. Photographs of Key View Point 3 are provided on **Figure 3.1-4**. The Project corridor would cross the Santa Cruz Harbor on the Woods Lagoon Railroad Bridge adjacent to the north side of the Murray Street Bridge. The Project would include construction of a cantilever with a fiberglass-reinforced deck on the north side of the railroad bridge for the new trail. The Project would not result in substantial interference of views of nearby scenic vistas of the Santa Cruz Harbor because the cantilever would be obscured by existing Woods Lagoon Railroad Bridge and its railings.

KEY VIEW POINT 4: EATON STREET LOOKING NORTH DOWN 6TH AVENUE

Key View Point 4 is located on Eaton Street (as also known as Murray Street) and provides fleeting views of mature vegetation, as shown on **Figure 3.1-5**. The Project would continue at-grade and parallel to the existing rail roughly parallel with Eaton Street, just after it transitions from Murray Street traveling east, and at the end of 6th Avenue. The existing rail corridor is screened from neighborhood and roadway viewers by mature trees and vegetation. An additional approximately 4-foot-tall retaining wall would be constructed south of the existing rail and north of the terminus of 6th Avenue, starting immediately west of the end of 6th Avenue and extending east to partially screen the existing rail and trail. The Project would not substantially alter scenic views of the Key View Point 4 vista because the proposed trail would be low-profile and partially screened by vegetation and a retaining wall. Please refer to the retaining wall discussion below for analysis of visual impacts from retaining walls.

KEY VIEW POINT 5: 7TH AVENUE LOOKING SOUTH

Key View Point 5 is located along 7th Avenue, looking southerly, and provides a scenic vista of mature vegetation, urban coastal development, and the distant Pacific Ocean. The Project would install a trail alongside the existing rail and improve crossings. The existing rail would remain, as shown in the top photo of **Figure 3.1-6**. The Project would remove one mature tree (visible in the foreground of the top photo of **Figure 3.1-6**, beyond the railroad tracks to the left-hand side). However, the Project would be required to replant trees in compliance with agency ordinances and permit requirements (refer to Section 3.3, *Biological Resources*), and removing a single mature tree would not adversely impact the scenic vista.

KEY VIEW POINT 6: 17TH AVENUE LOOKING SOUTH

Key View Point 6 is located on 17th Avenue, looking southerly, and provides a scenic vista of mature vegetation and the distant Pacific Ocean. At Key View Point 6, the proposed trail would be at-grade and constructed using similar colors, materials, and smooth textures that currently exist on 17th Avenue, as shown in the bottom photo of **Figure 3.1-6**. Project elements would be similar to the existing street and compatible with the existing environment. The Project would not substantially alter the scenic quality of the provided vista.

As discussed in the analyses for Key Views 1–6, the Project would not introduce structures or other features that would obstruct scenic views and would not substantially impact the quality of scenic vistas enjoyed from key view points along the Project corridor. Public vistas of the Pacific Ocean, surrounding beaches, and Boardwalk are along Segment 8. The Santa Cruz Harbor, mature vegetation, and urban coastal development visible along Segment 9 would be maintained and, where roadway improvements such as curb replacement or street repairs are suggested, enhanced by the Project. The Project would improve public access to scenic vistas by providing a trail with views of the Santa Cruz Boardwalk, the beach, and Twin Lakes State Beach. Impacts regarding substantial impacts to scenic vistas enjoyed at key view points would be **less than significant**. No mitigation is required.

Retaining Walls

Segment 8 would include a retaining wall (up to 24 inches tall) along the Boardwalk side to protect landscaping with no tree removal. Segment 9 would include upslope and downslope retaining walls ranging from approximately 1.5 feet up to 18 feet in height at the following general locations along the trail to support slopes and provide the required distance between the trail and rail (presented from west to east):

- SLR Trestle Bridge to Mountain View Avenue
- Pilkington Creek to Mott Avenue
- Mott Avenue to Seabright Avenue
- Seabright Avenue to the west side of Santa Cruz Harbor
- East side of Santa Cruz Harbor to 7th Avenue
- 7th Avenue to Leona Creek
- Leona Creek to El Dorado Avenue
- Simpkins Swim Center

The retaining wall proposed along Segment 8 would not affect visibility of scenic vistas since it would be at a shorter height than the existing landscaping and trees and thus would not hinder views of mature vegetation. The retaining walls proposed along Segment 9 would be constructed

using materials and colors that would blend with the surrounding environment. The different heights would be relative to the grades and slopes of the specific locations; therefore, the retaining walls along Segment 9 similarly would not hinder views. Overall, retaining walls would have a **less than significant** impact on scenic vistas. No mitigation is required.

Fencing

The Project may include safety fencing in Segment 9 to separate trail users from the rail as needed. The fencing and guardrails could be constructed using steel posts (4 feet, 8 inches, in height) and galvanized steel cable, similar to the fencing installed in Segment 7 and Segment 8 along the SLR Trestle Bridge. To promote wildlife movement, the lowest cable of the proposed fence would be 16 inches above finish grade. Guardrails would have no gaps exceeding 4 inches to meet code requirements.

Two visual renderings, labeled R1 and R2 as shown on **Figure 3.1-1**, were prepared for the Project. R1 is a visual rendering of the Pilkington Creek crossing, and R2 is a visual rendering of the proposed trail adjacent to the Simpkins Swim Center. As shown in the renderings on **Figure 3.1-7**, the fences would be placed and designed to minimize obstruction of scenic views and would be designed to allow open visibility of the surrounding landscape. Impacts to scenic vistas from fencing would be **less than significant**. No mitigation is required.

Trees

Residents, workers, and businesses along public roadways (including but not limited to Beach Street, Eton Street, Murray Street, and near the 7th Avenue and 17th Avenue crossings) currently experience scenic vistas of the Pacific Ocean, mature vegetation, and urban coastal development both in front of and beyond the rail. Following project construction, the trail would be mostly at-grade and would not block existing views as described for the key view points. However, as discussed in Section 3.3, the Ultimate Trail Configuration would require the removal of approximately 381 trees of various sizes, including mature trees along Segment 9, east of the SLR Trestle Bridge. Following the removal of trees, spaces left by the removed trees could improve distant views of the ocean and mountains (scenic vistas) but could degrade localized views (scenic resources). East of the Santa Cruz Harbor, public views of the Project corridor would be limited due to dense vegetation and trees and existing residential development that screen the existing rail alignment from the neighborhoods to the north. Tree removal in Segment 9 would therefore make the alignment more visible from some of the adjacent roadways, and the expected changes to views would be moderate.

As discussed in Section 3.3, trees removed to accommodate the Project would be replaced at ratios and locations determined in coordination with the regulatory permitting agencies and jurisdictional authorities (e.g., City, County, State Parks) through the regulatory permitting process. The exact location of replacement trees is uncertain at this time, and timing of growth to maturity equivalent to the trees that would be removed cannot be predicted with certainty. Therefore, despite required tree replacement, the required tree removal would affect public views of the Project corridor, degrade existing local scenic resources that include mature trees, and disrupt existing scenic vistas of mature vegetation. Therefore, impacts to scenic resources and vistas due to tree removal would be **potentially significant**.

Existing condition from Key View 1, on Pacific Avenue looking south with the rail line and Beach Street in the foreground and Santa Cruz wharf and Monterey Bay in the background.

Existing condition from Key View 1, on Beach Street looking west. The existing bicycle lanes and sidewalk are on the south side of Beach Street (left side of photo), and the rail line is on the north side (right side of photo).

Source: Rincon 2022.

Harris & Associates

Figure 3.1-2

Key View Point 1

Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

Existing conditions from Key View 2 looking southwest from Seabright Avenue with Murray Street and the rail line in the foreground.

Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

Source: Rincon 2022.

Harris & Associates

Figure 3.1-3

Key View Point 2

Existing condition from Key View 3, looking west on Murray Street from the existing sidewalk along the roadway. The lower harbor is to the south (left side) of Murray Street, and Woods Lagoon Railroad Bridge where the trail would be located is to the north (right side) of Murray Street.

Existing condition from Key View 3, looking south to the lower harbor from Murray Street Bridge.

Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

Source: Rincon 2022.

Harris & Associates

Figure 3.1-4

Key View Point 3

Existing conditions from Key View 4 looking north on 6th Avenue from Eaton Street, with the rail corridor behind the structures and trees in the background.

Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

Source: Rincon 2022.

Harris & Associates

Figure 3.1-5

Key View Point 4

Existing conditions from Key View 5 looking south on 7th Avenue, with the rail corridor in the foreground, as well as mature tree(s) on the east side of 7th Avenue, and Monterey Bay in the background.

Existing conditions from Key View 6 looking south on 17th Avenue, with the rail corridor in the foreground.

Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

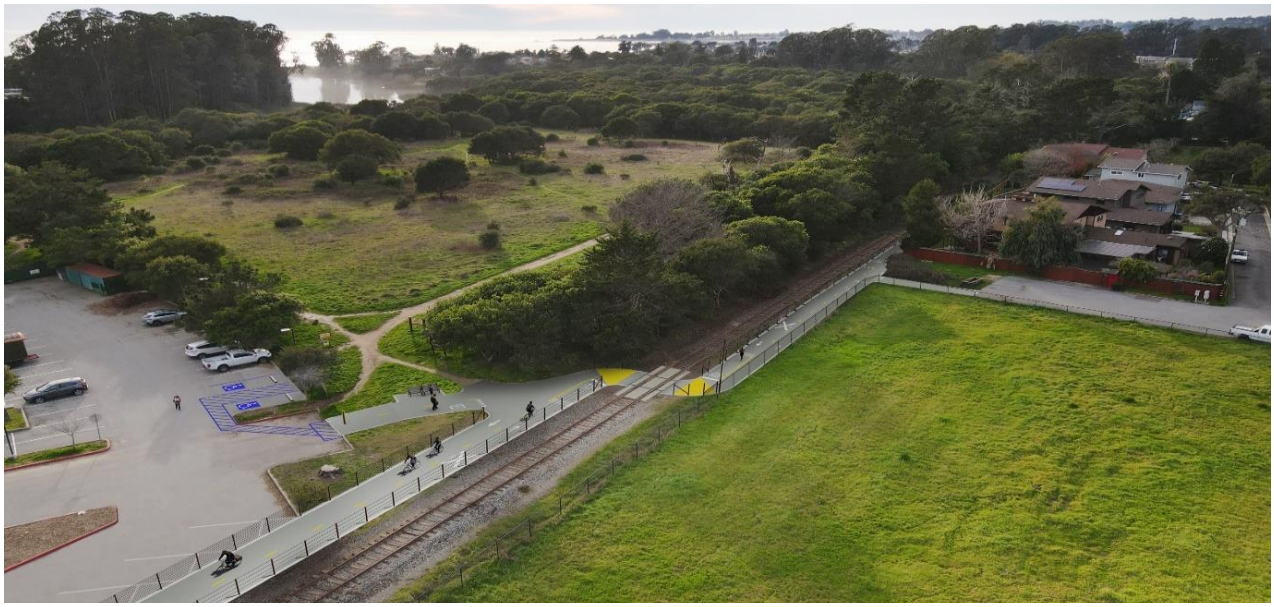
Source: Rincon 2022.

Harris & Associates

Figure 3.1-6

Key View Point 5

Visual rendering of the Project as it crosses over the Pilkington Creek (labelled R1 on **Figure 3.1-1**).



Visual rendering of the Project's connection to the Simpkins Swim Center (labelled R2 on **Figure 3.1-1**).

Path: C:\Users\Randy.Deodat\Desktop\Projects_Clone\City of Corona\Corona_Recycled_Water\Map Docs\NOP

Source: Rincon 2022.

Harris & Associates

Figure 3.1-7

Project Renderings

In summary, the Project would not introduce structures or other features that would block scenic public views experienced from key view points. Project features such as fencing and retaining walls would be designed to maintain scenic resources and vistas. However, the Project includes removal of approximately 381 trees of various sizes, including mature trees, throughout Segment 9 that would degrade localized scenic resources and disrupt existing scenic vistas experienced from local roadways and pedestrian facilities. No mitigation is available to reduce this impact, as trees of a similar maturity and/or size to the trees requiring removal cannot be planted in the same location. Further, there is uncertainty regarding exactly where the trees would be planted and whether the planted trees would reach maturity in a way that contributes to localized scenic resources and does not block scenic views. This impact would be somewhat offset in portions of Segment 9 that are in the City limits through implementation of the City's adopted Santa Cruz Rail Trail Arts Master Plan, which designates a planned mitigation area for replacement tree planting and would incorporate trees removed by the Project into public art (City of Santa Cruz 2018). However, it would not reduce this impact to a less than significant level. Therefore, impacts would be **significant and unavoidable**.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Similar to the Ultimate Trail Configuration, implementation of the Interim Trail (Part 1) would involve construction activity for a 24-month period to remove the rail line and build the Interim Trail, causing temporary degradation of scenic views by visible construction equipment, grading and earth movement, and paving of the trail. This would have a smaller disturbance area and would require less earthwork than the Ultimate Trail Configuration would; however, the removal of railroad tracks, ties, crossings equipment, concrete panels, and other materials would require substantially more export of construction materials via truck trips on area roadways, such as Murray Street, 7th Avenue, and 17th Avenue. As with the Ultimate Trail Configuration, implementation of the Interim Trail would result in **less than significant** construction-related impacts on scenic resources and vistas due to its temporary nature. No mitigation is required.

Once constructed, like the Ultimate Trail Configuration, the Interim Trail would improve public access to scenic vistas by providing a trail with views of the Santa Cruz Boardwalk, the beach, and Twin Lakes State Beach. Similar to the Ultimate Trail Configuration, the Interim Trail would not introduce structures or other features that block scenic views from key public view points and would not have an adverse impact on public views enjoyed from key view points along both segments of the Project corridor. The Interim Trail would install fencing/guardrails along the sides of bridges and where necessary for safety and security. However, because the railroad tracks would be removed, there would be no fencing between the trail and tracks. This overall reduction in fencing would result in incrementally less obstruction of scenic views from public roadways.

Additionally, as described in **Table 2-4** and in Section 3.3, implementation of the Interim Trail Part 1 would include removal of approximately 124 trees of various sizes, including mature trees, along Segment 9, compared to approximately 381 trees that would be removed for the Ultimate Trail Configuration. Implementing Part 1 of the Interim Trail includes removal of 51 Heritage and Significant Trees, which is approximately 25% of all trees in these categories along Segment 9. The uncertainty of timing for when trees would mature and where they would be located could have adverse impacts on scenic resources and vistas. Therefore, impacts to scenic vistas from tree removal would be **significant and unavoidable**.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Removal of the Interim Trail and rebuilding the rail line (Part 2) would require construction equipment for demolition of the trail and installation of railroad tracks, signals, and crossings. Haul trips from removing the rail and associated large vehicles could result in temporary impacts to scenic vistas. As described above for the Ultimate Trail Configuration and implementation of the Interim Trail (Part 1), construction impacts would be temporary, and impacts regarding scenic vistas would be less than significant.

Further, removing the Interim Trail and rebuilding the rail line (Part 2) requires no tree removal, and the estimated start of Part 2 could occur an estimated 25 years after construction of the Interim Trail (Part 1) and the associated tree removal, which provides enough time for replacement trees to reach maturity. Therefore, the impact to scenic resources and vistas would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Impacts of the Ultimate Trail Configuration as Part 3 of the Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. However, as described in **Table 2-4**, 280 trees additional would be removed to implement Part 3. While most construction-related and operational impacts to scenic resources and vistas would be less than significant, the substantial amount of tree removal required to build the Ultimate Trail Configuration would be **significant and unavoidable** because there is uncertainty regarding exactly where the trees would be planted and whether the planted trees would reach maturity.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the implementation and demolition of the Interim Trail, followed by construction of the Ultimate Trail Configuration, would result in significant and unavoidable impacts to scenic resources and vistas. Although construction involved with implementation of the optional Interim Trail would be temporary and result in less than significant impacts related to decreased in visual quality during construction, the removal of approximately 404 trees (124 trees during Part 1 and an additional 280 trees during Part 3) would constitute a **significant and unavoidable** impact to scenic vistas.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would result in less than significant impacts to scenic resources and vistas during most construction activities given the temporary nature of construction equipment and staging. However, both scenarios would require the removal of approximately to accommodate trail construction, leading to **significant and unavoidable** impacts involving scenic resources vistas.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Construction of this connection would require the removal of 15 trees, in addition to that required for the Project without this design option, which could potentially impact the quality of scenic vistas enjoyed from nearby public viewing points, such as Murray Street and the East Harbor Trail. This would contribute to the Project's **significant and unavoidable** impact to scenic resources.

Threshold C:	In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site or its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If in an urbanized area, conflict with applicable zoning and other regulations governing scenic quality.

Impact AES-2 THE PROJECT WOULD BE INCONSISTENT WITH POLICIES THAT PERTAIN TO TREE AND VEGETATION REMOVAL. (ULTIMATE TRAIL CONFIGURATION: SIGNIFICANT AND UNAVOIDABLE; OPTIONAL INTERIM TRAIL: SIGNIFICANT AND UNAVOIDABLE)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Project would predominantly pass through the urbanized City of Santa Cruz and the unincorporated, urbanized community of Live Oak. Therefore, the following analysis in **Table 3.1-2** discusses the Project's consistency with applicable zoning and regulations governing scenic quality. To provide a more conservative analysis, **Table 3.1-2** also includes City and County General Plan policies relevant to scenic quality and degradation of public views. There are no City Municipal Code regulations that would be relevant and apply to the Project.

While the Project would be consistent with most applicable regulations governing scenic quality, the Project would be inconsistent with County General Plan Policies 5.10.3 and 5.18.8 (as discussed in **Table 3.1-2**), which pertain to removal of trees and vegetation. Inconsistency with these policies would lead to the Project having a **significant and unavoidable** impact regarding consistency with applicable regulations that govern scenic quality.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Similar to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, construction of the optional Interim Trail (Part 1) would temporarily affect scenic quality because of vegetation removal, grading, and paving. However, construction of the Interim Trail would be consistent with the same regulations governing scenic quality as the Ultimate Trail Configuration, which would reduce visual impacts from construction activities. Furthermore, given the temporary duration of construction, construction impacts would be **less than significant**.

The permanent impacts associated with tree removal for operation of the Interim Trail would be similar to the Ultimate Trail Configuration, as shown in **Table 3.1-2**, and would be **significant and unavoidable**.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) would temporarily affect scenic quality through temporary construction activities such as demolition of paving and installation of railroad track. Please refer to the impact discussion described above for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Given the temporary duration of construction, construction impacts would be **less than significant**.

Rebuilding the rail corridor would occur in generally the same alignment as the Interim Trail and would be consistent with the same regulations governing scenic quality as the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration),* as shown in **Table 3.1-2**. The demolition of the Interim Trail and rebuilding the rail line would not require tree or vegetation removal, this phase of the Interim Trail would be consistent with County General Plan Policies 5.10.3 and 5.10.18. The operational impact would be **less than significant**.

Table 3.1-2 City of Santa Cruz and County of Santa Cruz County General Plan Policy Consistency Analysis

Policy or Regulation	Ultimate Trail Configuration	Optional Interim Trail (Parts 1, 2, 3)
California Coastal Act		
Section 30251: The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural landforms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas.	**Consistent.** The Project would comply with this regulation because it would maintain scenic views of coastal areas throughout Segments 8 and 9 of the Project corridor. Fencing would be designed to protect views of scenic areas. To enhance visual quality, landscaping would restore vegetation in areas where trees are removed. The Project would be consistent with this policy.	**Consistent.** Same as Ultimate Trail Configuration.
County of Santa Cruz Municipal Code		
Section 13.20.130: This section provides design criteria for Coastal Zone projects, including visual compatibility, minimum site disturbance, and siting and design of landscaping, including fences and walls, so they do not adversely impact public views and scenic character.	**Consistent.** The Project would comply with this regulation because fencing is designed to maintain public views, and trail color, materials, and elements would match existing roadways to maintain visual character. The Project would not substantially decrease scenic quality and would be consistent with the County's Municipal Code.	**Consistent.** Same as Ultimate Trail Configuration.
Santa Cruz County General Plan		
Policy 5.10.3, Protection of Public Vistas. Protect significant public vistas as described in policy 5.10.2 from all publicly used roads and vista points by minimizing disruption of landform and aesthetic character caused by grading operations, timber harvests, utility wires and poles, signs, inappropriate landscaping, and structure design. Provide necessary landscaping to screen development which is unavoidably sited within these vistas.	**Inconsistent.** The Project would situate construction staging areas to avoid impacts to vegetation, when feasible. Project fencing would be designed to maximize views of public vistas along the trail. The Project would result in removal of 381 trees along the Project corridor as discussed under Impact AES-1. Although the Project would include tree planting to restore trees and landscaping along the Project corridor, there would be a potential impact to public vistas from removal of trees. The Project would be inconsistent with this policy.	**Inconsistent.** Similar to the Ultimate Trail Configuration, the Interim Trail would situate construction staging areas to avoid impacts to vegetation, when feasible, and Project fencing would be designed to maximize views of public vistas along the trail. Part 1 of the Interim Trail would remove 124 trees, and Part 3 of the Interim Trail would remove 280 trees, for a total of 404 trees. Thus, there would be a potential impact to public vistas from tree removal, and the Project would be inconsistent with this policy.
Policy 5.10.6, Preserving Ocean Vistas. Where public ocean vistas exist, require that these vistas be retained to the maximum extent possible as a condition of approval for any new development.	**Consistent.** The Project would not only retain public views of ocean vistas throughout the Project corridor but would also increase public access to viewing areas for ocean vistas. The Project would be consistent with this policy.	**Consistent.** Same as Ultimate Trail Configuration.
Policy 5.18.8, Encouraging Landscaping. Maintain vegetated and forested areas, and encourage cultivation	**Consistent.** The Project would require the removal of 381 trees, which would decrease the density of vegetated and forested areas along the Project corridor. However, the	**Consistent.** Part 1 of the Interim Trail would remove 124 trees, and Part 3 of the Interim Trail would remove 280 trees, for a total of 404 trees. However, the Project would

Policy or Regulation	Ultimate Trail Configuration	Optional Interim Trail (Parts 1, 2, 3)
of street trees and yard trees for their contributions to improved air quality.	Project would replace trees and would include landscaping along the corridor. Landscaping would be drought-tolerant plants that would require minimal maintenance. The Project would be consistent with this policy.	replace trees and would include landscaping along the corridor. Landscaping would be drought-tolerant plants that would require minimal maintenance. The Project would be consistent with this policy.
City of Santa Cruz General Plan		
Policy CD1.2. Ensure that the scale, bulk, and setbacks of new development preserve important public scenic views and vistas.	**Consistent**. The Project would not include structures or bulky features that would hinder public scenic views of the nearby vistas, including the Pacific Ocean, SLR, beach, Boardwalk, or Santa Cruz Small Craft Harbor. Project fencing, both along the trail and at waterway crossings, is designed to maximize views of public vistas along the trail. The Project would be consistent with this policy.	**Consistent.** Same as Ultimate Trail Configuration.
Policy CD1.3. Ensure that development is designed to be in harmony with natural topography and vegetation.	**Consistent**. The Project alignment would be mostly at-grade, with minor grading and some vegetation removal required. Retaining walls along sloped parts of the trail would be constructed using similar colors and materials as the surrounding area. The Project would be consistent with this policy.	**Consistent.** Same as Ultimate Trail Configuration.
Policy CD3.1. Develop and maintain physical and visual linkages between key areas in the city.	**Consistent.** The Project would construct a 2.2-mile trail through the City, providing pedestrian access to multiple key view points in the City, such as the Pacific Ocean, Santa Cruz Small Craft Harbor, and SLR.	**Consistent.** Same as Ultimate Trail Configuration.
Policy CD3.2. Ensure that the scale, bulk, and setbacks of new development preserve public views of city landmarks where possible.	**Consistent.** The Project would not include structures or bulky features that would hinder public scenic views of City landmarks. Project fencing, both along the trail and at waterway crossings, is designed to maximize views along the trail. The Project would be consistent with this policy.	**Consistent.** Same as Ultimate Trail Configuration.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration following removal of the Interim Trail (Part 3) would result in the same impacts as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* in its entirety and in **Table 3.1-2**. The visual impacts from tree removal would be **significant and unavoidable**.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of implementing all three parts of the Interim Trail, including construction of the Ultimate Trail Configuration (Part 3), would result in significant and unavoidable impacts regarding conflict with applicable regulations governing scenic quality, as shown in **Table 3.1-2**. Construction involved with Interim Trail implementation and demolition and rail removal and rebuilding would be temporary and consistent with City and County regulations. Construction would result in **less than significant** impacts. However, due to tree removal operational impacts would be **significant and unavoidable**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would temporarily affect scenic quality through temporary construction activities, although the optional Interim Trail would have slightly greater impacts due to the two additional phases of construction, but the impact would still be **less than significant**.

The Project, with and without the optional Interim Trail, would result in substantial tree removal that conflicts with applicable regulations that govern scenic quality, specifically scenic views, resulting in a **significant and unavoidable** impact.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. This would result in removal of 15 additional trees, which could also be considered inconsistent with applicable regulations governing scenic quality. Although the removal of 15 trees alone may not necessarily be a substantial effect resulting in a significant impact, this design option would be implemented in conjunction with the Project, with or without the optional Interim Trail. Therefore, this design option would contribute to the **significant and unavoidable impact** relative to tree removal and consistency with applicable policies.

The East Harbor Connection would occur in Twin Lakes State Beach. The Twin Lakes State Beach General Plan identifies goals of maintaining recreational and scenic value throughout the State Beach area. Although the trail connection would require the removal of 15 trees, it would increase trail connectivity to public viewing points of the Pacific Ocean, and provide additional recreational facilities near the beach, which would be consistent with applicable regulations from the Twin Lakes State Beach General Plan.

Like the Project, the overall impact of the East Harbor Connection would be **significant and unavoidable**.

Threshold D:	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Impact AES-3 THE PROJECT WOULD NOT ADVERSELY AFFECT DAYTIME OR NIGHTTIME VIEWS (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Project construction would occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. As stated in Section 2.6, *Project Construction*, construction could also start at 7:00 a.m., Monday through Friday, or occur on Saturdays or Sundays with written approval from the City or County. There would be no construction on national holidays. Although the windows and metal on construction equipment during construction could increase glare, this effect would be minimal relative to existing glare from vehicles traveling on roadways along the Project corridor. In the portions of the corridor away from roadways, such as through Twin Lakes State Beach, there are fewer adjacent land uses that could be adversely affected by construction-related glare. Because construction activities would occur during the daytime, construction would not necessitate lighting. The impact would be **less than significant**. No mitigation is required.

Operation

The Project would be built in an urbanized area that has existing street lighting and light emitted from existing buildings along most of the Project corridor. Existing light sources along adjacent roadways and crossings would illuminate portions of the trail. Along other portions of the Project corridor, lighting would be installed for safety. As discussed in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, new lighting types that are planned and/or under consideration include the following (from west to east):

- East Cliff Drive undercrossing by installing surface-mounted fixtures under the East Cliff Drive overpass and/or surface-mounted wall packs on the retaining wall.
- East Cliff Drive undercrossing to Seabright Avenue by installing a combination of pole-mounted fixtures with LED lights along the trail and pole with single head light fixture to match existing streetlights at trail crossings. In addition, converting existing single luminaire streetlights located along Murray Street to double luminaire.
- Seabright Avenue to the west side of Woods Lagoon Railroad Bridge by installing a combination of pole-mounted fixtures with LED lights along the trail and/or surface-mounted wall packs on retaining walls. In addition, converting existing single luminaire streetlight located along Murray Street to double luminaire.
- East side of Woods Lagoon Railroad Bridge to 17th Avenue by installing a combination of pole-mounted fixtures with LED lights and/or surface-mounted wall packs on retaining walls.
- El Dorado Avenue trail crossing by installing a pole with single head light fixture.
- 17th Avenue trail crossing by installing a pole with single head light fixture.

Additionally, on bridges and viaducts and through the riparian zone, there would be low level lighting directed down toward the trail, similar to that on the SLR Trestle Bridge in Segment 8. There could be additional lighting upgrades where the trail crosses roadways at Seabright, 7th, and 17th Avenues and other locations as determined necessary for trail user safety.

As stated in Section 2.4, *Project Characteristics*, lighting along the trail would be "dark sky compliant" in that it would minimize light pollution and offensive glare by directing light downward so it would not spill beyond the Project corridor. This type of lighting would also reduce the potential for nighttime lighting to obscure views of the night sky or otherwise affect nighttime views in the trail vicinity.

The Project would not include any elements with high reflective qualities that would increase daytime or nighttime glare. New lighting would be required to adhere to applicable lighting regulations to reduce lighting impacts. Therefore, impacts to light and glare would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The potential light and glare impacts from implementation of the Interim Trail, demolition of the rail line, and construction of the Interim Trail (Part 1), would be similar as discussed above for the Ultimate Trail Configuration because the construction duration would be similar (24 months) and similar lighting would be added to illuminate the trail. At the Santa Cruz Harbor crossing, new lighting would be installed along the existing Woods Lagoon Railroad Bridge for the Interim Trail rather than on the cantilever for the Ultimate Trail Configuration. Lighting would be required to comply with local regulations and would be dark sky compliant. Overall, the Interim Trail would have a have a **less than significant impact** related to light and glare. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Interim Trail removal and rail installation activities (Part 2) would occur during the daytime; therefore, lighting would not be needed for construction, although there could be glare from windows and metal on construction equipment. The rebuilt rail line would not require lighting along the alignment, and because the Interim Trail would be removed, lighting for the trail, excluding roadway lighting, would similarly be removed. The impact from demolition of the Interim Trail and rebuilding the rail line would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration as Part 3 of the Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. The Ultimate Trail Configuration would result in **less than significant** impacts to light and glare.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of Interim Trail Parts 1, 2, and 3 would be slightly greater with respect to potential glare from construction equipment because there are two additional construction phases, but overall, the impact for construction and operation would result in **less than significant** impacts regarding light and glare. Lighting features along the Project corridor would be regulated by City and County Municipal Code lighting requirements and shielded downward to minimize impacts.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts regarding lighting and glare because they would have similar lighting installed for safety along the trail corridor. Under both scenarios, lighting features would be regulated by City and County Municipal Code lighting requirements and shielded downward to minimize impacts, which would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. New lighting could be installed for safety along this connection. Therefore, the Project's light and glare impacts would be slightly greater with the East Harbor Connection, but the impact of lighting on just this connection and the Project as a whole would still be **less than significant**.

3.1.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
AES-1. The Project would have an adverse effect on scenic resources and vistas through the removal of mature trees.	**SU**	**SU** Similar, slightly lesser	LTS Substantially lesser	**SU** Substantially similar
AES-2. The Project would be inconsistent with policies that pertain to tree and vegetation removal.	**SU**	**SU** Similar, slightly lesser	LTS Substantially similar	**SU** Substantially similar
AES-3. The Project would not adversely affect daytime or nighttime views.	LTS	LTS Substantially similar	LTS Substantially lesser	LTS Substantially similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.2 Air Quality

This section describes existing regional air quality, outlines the regulatory framework applicable to air quality management, and evaluates impacts related to criteria pollutant emissions as a result of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* construction and operation. **Table 3.2-1** presents a summary of potential impacts related to air quality.

Table 3.2-1 Summary of Project Impacts Related to Air Quality[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
AIR-1. The Project would not conflict with or obstruct implementation of the adopted MBARD AQMP.	Less than Significant	None Required	Less than Significant
AIR-2. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is designated non-attainment.	Less than Significant	None Required	Less than Significant
AIR-3. The Project would not expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	None Required	Less than Significant
AIR-4. The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less than Significant	None Required	Less than Significant
Beneficial Effect: The Project would provide an alternative transportation corridor for bicyclists, pedestrians, and other users, which is expected to reduce vehicular travel and associated emissions.			

[a] The impacts apply to both the *Proposed Project: Trail next to Rail line (Ultimate Rail with Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.2.1 Existing Conditions

Regional and Project Corridor Setting

Climate and Topography

The Project corridor is located in the North Central Coast Air Basin (NCCAB). The NCCAB is composed of Monterey, Santa Cruz, and San Benito Counties and covers an area of more than 5,100 square miles. The air basin features varied vegetation, climate, and geography and includes portions of several mountain ranges, the Santa Lucia and Gabilan Ranges in Monterey and San Benito Counties, the southern portion of the Santa Cruz Mountains in Santa Cruz County (County), and the Diablo Range in the eastern half of San Benito County. The coastal terraces in the Santa Cruz area, the flat plains surrounding Watsonville, Salinas, and King City, and the southern Santa Clara Valley are markedly defined by these mountain ranges. The northwest sector of the NCCAB, where the Project corridor is located, is dominated by the Santa Cruz Mountains (Santa Cruz County 2022).

The Pacific High pressure cell, a semi-permanent high-pressure cell in the eastern Pacific Ocean, is the controlling factor in the NCCAB's climate. In the summer, the high-pressure cell is dominant and causes persistent west and northwest winds over the entire California coast. Air descends from the Pacific High and warms and dries as it descends, resulting in generally sunny skies and dry weather (NOAA 2018). The relatively cooler temperature of the Pacific Ocean creates a layer of cool air

directly over the ocean. This stable temperature inversion of warm air over a cooler coastal layer of air creates an onshore air current that passes over cool ocean waters to bring fog and relatively cool air into the coastal valleys. The warmer aloft air acts as a lid that inhibits vertical air movement and allows air pollutants to concentrate in the lower level.

The generally northwest–southeast orientation of mountainous ridges tends to restrict and channel the summer onshore air currents. Surface heating in the interior portion of the Salinas and San Benito Valleys creates a weak low pressure that intensifies the onshore air flow during the afternoon and evening.

In the fall, the surface winds become weak, and the marine layer grows shallow, dissipating altogether on some days. The airflow is occasionally reversed in a weak offshore movement, and the relatively stationary air mass is held in place by the Pacific High pressure cell, which allows pollutants to build up over a period of a few days. It is most often during this season that north or east winds develop, transporting pollutants from either the San Francisco Bay Area or the Central Valley into the NCCAB.

During the winter, the Pacific High migrates southward and has less influence on the NCCAB. Air frequently flows in a southeasterly direction out of the Salinas and San Benito Valleys, especially during night and morning hours. The general absence of deep, persistent inversions and occasional storm systems usually result in good air quality for the basin as a whole in winter and early spring.

In the Project area, average annual temperatures in degrees Fahrenheit are relatively stable and range from winter lows in the upper 30s to summer highs in the middle 70s (WRCC 2022). The total average annual precipitation is approximately 29.33 inches, with the majority of rainfall occurring from November through March.

Air Pollutants of Primary Concern

The federal and state Clean Air Acts mandate the control and reduction of certain air pollutants. Under these acts, the U.S. Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) for certain "criteria pollutants" considered harmful to public health and the environment. Ambient air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions and by the climatic and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants (such as carbon monoxide [CO] and particulate matter) is proximity to major sources. Ambient CO levels in particular usually closely follow the spatial and temporal distributions of vehicular traffic. A discussion of primary criteria pollutants is provided below.

OZONE

Ozone is a colorless gas with a pungent odor. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROGs), and oxides of nitrogen (NO_x). ROG (the organic compound fraction relevant to ozone formation and sufficient equivalent for the purposes of this analysis to volatile organic compounds [VOCs][1]) is composed of non-methane hydrocarbons (with some specific exclusions), and NO_x is made of different chemical combinations of nitrogen and oxygen, mainly nitric oxide (NO) and nitrogen dioxide (NO_2). A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high ROG and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly

[1] ROG is equivalent to VOC per MBARD Rule 101, 2.32.

decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant.

CARBON MONOXIDE

CO is an odorless, colorless, gas. CO causes a number of health problems, including fatigue, headache, confusion, and dizziness. The incomplete combustion of petroleum fuels in on-road vehicles and at power plants is a major cause of CO. CO is also produced during the winter from wood stoves and fireplaces. CO tends to dissipate rapidly into the atmosphere; consequently, violations of the state CO standard are generally associated with major roadway intersections during peak hour traffic conditions. Localized CO "hotspots" can occur at intersections with heavy peak hour traffic.

NITROGEN DIOXIDE

NO_2 is a by-product of fuel combustion, with the primary source being motor vehicles and industrial boilers and furnaces. The principal form of nitrogen oxide produced by combustion is NO, but NO reacts rapidly to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant. A relationship between NO_2 and chronic pulmonary fibrosis may exist, and an increase in bronchitis in young children at concentrations below 0.3 parts per million (ppm) may occur. NO_2 absorbs blue light and causes a reddish brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of particulate matter 10 microns or less in size (PM_{10}) and acid rain.

PARTICULATE MATTER

Suspended particulate matter (airborne dust) consists of particles small enough to remain suspended in the air for long periods. Fine particulate matter includes particles small enough to be inhaled, pass through the respiratory system, and lodge in the lungs, with resultant health effects. Particulate matter can include materials such as sulfates and nitrates, which are particularly damaging to the lungs. Health effects studies resulted in revision of the Total Suspended Particulate Standard in 1987 to focus on particulates that are small enough to be considered "inhalable," (i.e., 10 microns or less in size [PM_{10}]). In July 1997, a further revision of the federal standard added criteria for $PM_{2.5}$, reflecting recent studies that suggested that particulates less than 2.5 microns in diameter are of particular concern.

Federal and state standards have been established for ozone, CO, NO_2, sulfur dioxide (SO_2), lead, and fine particulates (PM_{10} and $PM_{2.5}$). **Table 3.2-2** summarizes the current federal and state standards for each of these pollutants. The primary standards listed below have been set at levels intended to protect public health. California standards are generally more restrictive than federal standards. Depending on whether the standards are met or exceeded, the local air basin is classified as in "attainment" or in "non-attainment."

Table 3.2-2 Current Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone	1-Hour	—	0.09 ppm
	8-Hour	0.070 ppm	0.070 ppm
Carbon Monoxide (CO)	8-Hour	9 ppm	9.0 ppm
	1-Hour	35 ppm	20.0 ppm
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.1 ppm	0.18 ppm
Sulfur Dioxide (SO_2)	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
Respirable Particulate Matter (PM_{10})	Annual	—	20 µg/m^3
	24-Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	Annual	12 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	—
Lead	30-Day Average	—	1.5 µg/m^3
	3-Month Average	0.15 µg/m^3	—

Source: BAAQMD 2017.
µg/m^3 = micrograms per cubic meter; ppm = parts per million

"Pollutant" – Current Air Quality

The Monterey Bay Air Resources District (MBARD) consists of all three counties in the NCCAB, including Santa Cruz County; therefore, the Project corridor is under the jurisdiction of the MBARD. The MBARD is responsible for air monitoring, permitting, enforcement, long-range air quality planning, regulatory development, education, and public information activities related to air pollution in the NCCAB. The MBARD monitors ambient air quality in the NCCAB at monitoring stations located in Salinas, Hollister, Carmel Valley, Santa Cruz, Scotts Valley, Watsonville, and Davenport. The MBARD monitors air pollutant levels to measure and determine if that air quality standards are met and, if they are not met, to develop strategies to meet the standards. As indicated above, depending on whether or not the standards are met or exceeded, the air basin is classified as being in "attainment" or in "non-attainment," respectively. **Table 3.2-3** summarizes the federal and state attainment status for criteria pollutants.

As shown in **Table 3.2-3**, the NCCAB is in attainment or unclassifiable status for all federal AAQS. For state AAQS, the NCCAB is currently in non-attainment status for respirable particulate matter (PM_{10}).

Table 3.2-3 Santa Cruz County Air Basin Attainment Status

Pollutant	Averaging Time	California Standards	Federal Standards
Ozone	1-Hour	Attainment	No Federal Standard
	8-Hour		Attainment
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	Non-Attainment	No Federal Standard
	24-Hour		Unclassified[1]
Sulfur Dioxide (SO_2)	24-Hour	Attainment	Unclassified/Attainment
	1-Hour		
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	Attainment	Attainment
	24-Hour	No State Standard	
Carbon Monoxide (CO)	8-Hour	Unclassified	Unclassified/Attainment
	1-Hour		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	No State Standard	Unclassified/Attainment
	1-Hour	Attainment	No Federal Standard

Source: CARB 2022a.
[a] Unclassified; indicates data are not sufficient for determining attainment or non-attainment.
Attainment = Meeting air quality standards
Non-attainment = Exceeding air quality standards

Table 3.2-4 summarizes available annual air quality data for Santa Cruz County for the most recent years available at the MBARD's Soquel Avenue monitoring station and the Hollister-Fairview Road monitoring station in Hollister. The Soquel Avenue monitoring station, located at 2544 Soquel Avenue in Santa Cruz, is the closest station to the Project corridor. The Hollister-Fairview Road monitoring station is the closest station to monitor PM_{10} in the NCCAB. The data collected at the MBARD-operated stations is shown in **Table 3.2-4**.

Table 3.2-4 Ambient Air Quality Data

Pollutant	Monitoring Station	2018	2019	2020
Ozone, ppm – Worst Hour	Soquel Avenue	0.075	0.068	0.070
Number of Days of State Exceedances (>0.09 ppm)		0	0	0
Ozone, ppm – Worst 8-Hour Average	Soquel Avenue	0.061	0.059	0.057
Number of Days of Federal/State Exceedances (>0.07 ppm)		0	0	0
Particulate Matter <10 microns, μg/m^3 Worst 24 Hours	Hollister-Fairview Road	95.9	130.7	159.0
Number of Samples of State Exceedances (>50 μg/m^3)		—[a]	— [a]	— [a]
Number of Samples of Federal Exceedances (>150 μg/m^3)		0	0	1
Particulate Matter <2.5 microns, μg/m^3 Worst 24 Hours	Soquel Avenue	92.0	21.3	90.4
Number of Days Federal Exceedances		9	0	13

Source: CARB 2022b.
[a] Insufficient data available
μg/m^3 = micrograms per cubic meter; ppm = parts per million

Given that the NCCAB is designated as non-attainment for PM_{10}, this is the primary pollutant of concern for the NCCAB. As indicated in **Table 3.2-4**, average PM_{10} concentrations exceeded the state standard for PM_{10} in 2018, 2019, and 2020 and the federal standard in 2020.

Sensitive Receptors

Certain population groups are more sensitive to air pollution than others, in particular children, older adults, and people with acute and chronic illnesses, especially those with cardio-respiratory diseases. As described in the MBARD's 2008 California Environmental Quality Act (CEQA) Guidelines, 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. Residences are located throughout the Project corridor, primarily along Segment 9.

3.2.2 Regulatory Setting

This section describes the federal, state, regional, and local plans, policies, and laws relevant to air quality for the Project.

Federal

Clean Air Act and National Ambient Air Quality Standards

The Clean Air Act (CAA) of 1970 is the comprehensive federal law that regulates air emissions from stationary and mobile sources. The CAA authorizes the USEPA to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare and to regulate emissions of hazardous air pollutants. Current NAAQS are listed in **Table 3.2-2**.

The USEPA has classified air basins (or portions thereof) as being in "attainment," "non-attainment," or "unclassified" for each criteria air pollutant based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data was available as a basis for a non-attainment or attainment designation. **Table 3.2-3** lists the attainment status of the NCCAB for the criteria pollutants. The NCCAB is in attainment or unclassified for all criteria pollutants.

The CAA was amended in 1990 to better address hazardous air pollutants (Title III). Title III offers a comprehensive plan for achieving significant reductions in emissions of hazardous air pollutants from major sources. It includes a list of 189 toxic air pollutants of which emissions must be reduced. The USEPA maintains and updates a list of source categories including (1) major sources emitting 10 tons per year of any one, or 25 tons per year of any combination, of those pollutants, and (2) area sources (smaller sources, such as dry cleaners). As required by Title III, the USEPA developed Maximum Achievable Control Technology (MACT) standards. MACT standards use the hazardous air pollutant emissions of the best-performing industry sources to set the "MACT floor," which becomes the minimum standard that an industry must at least meet in order to comply with the CAA.

State

California Clean Air Act and California Ambient Air Quality Standards

As a part of the California Environmental Protection Agency, CARB is responsible for the coordination and administration of both federal and state air pollution control programs in California. The federal CAA allows states to adopt AAQS and other regulations provided that they are at least as stringent as federal standards. The California Clean Air Act became effective in 1989 and requires all areas of the state to attain the state AAQS at the earliest practicable date. To that end, California has adopted ambient standards (California Ambient Air Quality Standards [CAAQS]) that are equal to or stricter than the federal standards for six criteria air pollutants. The CAAQS are

listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations and are provided in **Table 3.2-2**. Similar to the federal CAA, areas have been designated as attainment, non-attainment, or unclassified with respect to the state AAQS. The NCCAB is currently in state non-attainment status respirable particulate matter (PM_{10}).

Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles

In September 2000, CARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (CARB 2000). The plan outlines a comprehensive and ambitious program that includes the development of numerous control measures aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). CARB has adopted several regulations that will reduce diesel emissions from in-use vehicles and engines throughout California. In some cases, the particulate matter reduction strategies also reduce smog-forming emissions such as NO_x. As an ongoing process, CARB reviews air contaminants and identifies those that are classified as toxic air contaminant (TACs). CARB also continues to establish new programs and regulations for the control of TACs, including diesel particulate matter, as appropriate.

Air Quality and Land Use Handbook

In 2005, CARB's Community Health Program made available the Air Quality and Land Use Handbook: A Community Health Perspective to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process (CARB 2005). The recommendations in the handbook are voluntary and do not constitute a requirement or mandate for either land use agencies or local air districts.

Regional

The MBARD regulates air quality in the NCCAB and is responsible for attainment planning related to criteria air pollutants and for district rule development and enforcement. It also reviews air quality analyses prepared for CEQA assessments and published the CEQA Air Quality Guidelines (MBARD Guidelines) (last revised February 2008) for use in the evaluation of air quality impacts (MBARD 2008). The purpose of the MBARD Guidelines is to assist in the review and evaluation of air quality impacts from projects that are subject to CEQA. The MBARD Guidelines are an advisory document intended to provide lead agencies, consultants, and project proponents with uniform procedures for assessing potential air quality impacts and preparing the air quality section of environmental documents. The MBARD Guidelines are also intended to help these entities anticipate areas of concern from the MBARD in its role as a lead, commenting and/or responsible agency for air quality.

According to the MBARD Guidelines, during construction, an impact would occur if the Project would cause a violation of PM_{10} AAQS at nearby or upwind of sensitive receptors, based on if the Project would emit more than 82 lbs/day of PM_{10}. Ozone impacts during construction would potentially occur if the Project would use equipment that is not "typical construction equipment." Typical construction equipment includes but is not limited to dump trucks, scrapers, bulldozers, compactors, and front-end loaders. Construction projects using typical construction equipment are accommodated in the emission inventories of federally and state-required air plans and would not have a significant impact.

During operation, a project is considered to have a significant impact if it would:

- Generate direct (area source or stationary) plus indirect (operational or mobile) emissions of either ROG or NO_x that exceed 137 pounds (lbs)/day
- Generate on-site emissions of PM_{10} exceeding 82 lbs/day
- Generate direct emissions of CO exceeding 550 lbs/day
- Generate direct emissions of sulfur oxides (SO_X) exceeding 150 lbs/day

The MBARD Guidelines state that the 82 lbs/day threshold for construction emissions of PM_{10} is the threshold for both individual and cumulative impacts on local air quality. Projects that are inconsistent with the Air Quality Management Plan (AQMP), described below, would result in a significant cumulative impact related to ozone emissions. A project is consistent with the AQMP if it is consistent with the growth assumptions in the AQMP and is, therefore, accommodated in the emissions inventories.

For impacts related to CO, the MBARD Guidelines indicate that any of the following traffic effects should be assumed to generate a significant CO impact unless CO dispersion modeling demonstrates otherwise:

- Intersections or road segments that operate at level of service (LOS) D or better that would operate at LOS E or F with the Project's traffic
- Intersections or road segments that operate at LOS E or F where the volume-to-capacity ratio would increase 0.05 or more with the Project's traffic
- Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with the Project's traffic
- Unsignalized intersections that operate at LOS E or F where the reserve capacity would decrease by 50 or more with the Project's traffic (This criterion is based on the turning movement with the worst reserve capacity.)
- Project would generate substantial heavy-duty truck traffic or generate substantial traffic along urban street canyons or near a major stationary source of CO

In accordance with the California Clean Air Act, the MBARD has developed an AQMP (MBARD 2017). The focus of the plan is achieving the 8-hour ozone standard in the region. The plan includes an updated air quality trends analysis; emissions inventory that includes the latest information on stationary, area, and mobile emission sources; and mobile source programs.

Local

City of Santa Cruz General Plan and Local Coastal Program

The City of Santa Cruz's (City's) General Plan and Local Coastal Program includes goals, policies, and actions to address air quality in the *Hazards, Safety, and Noise* chapter. Relevant policies and actions that implement Goal HZ2, Clean Air, consist of the following:

- **Policy HZ2.1.** Strive to achieve state and federal air quality standards for the region.
- **Policy HZ2.2.** Address localized air quality issues, including indoor air quality.
    - **Action HZ2.2.1.** Require future development projects to implement applicable MBARD control measure and/or air quality mitigations in the design of new projects as set forth in the District's "CEQA Guidelines."

- **Action HZ2.2.2.** Permit major indirect sources of air pollution only if they provide transportation measures to reduce their impacts to a less-than-significant level, consistent with applicable MBARD recommended mitigation and control measures as set forth in the District's "CEQA Guidelines."
- **Action HZ2.2.3.** Locate air pollution-sensitive land uses away from major sources of air pollution or require mitigation measures to protect residential and sensitive land uses from freeways, arterials, point source polluters, and hazardous material locations.
- **Action HZ2.2.4.** Encourage public education programs promoting reduced emissions from transportation-generated pollutants and area-wide sources.
- **Action HZ2.2.6.** Support MBARD air pollution control strategies, air quality monitoring and enforcement activities.

City of Santa Cruz Municipal Code

Chapter 24.14, *Environmental Resource Management*, of the City's Municipal Code includes conservation regulations. Section 24.14.010 of the regulations states that one of the intended accomplishments of the regulations is to maintain and improve, to the extent feasible, existing air quality by achieving or exceeding state air quality guidelines. Additionally, a stated purpose of the Citywide Trip Reduction Program (Chapter 10.46) is to improve air quality through reduced traffic.

Santa Cruz County General Plan and Local Coastal Program

The Conservation and Open Space Element of the County's General Plan and Local Coastal Program provides a list of policies and programs intended to improve the air quality of the NCCAB (Santa Cruz County 1994). Key programs and policies from the General Plan are provided below:

- **Policy 5.18.1.** Ensure new development projects are consistent at a minimum with the Monterey Bay Unified Air Pollution Control District [now MBARD] Air Quality Management Plan and review such projects for potential impact on air quality
- **Policy 5.18.7.** Emphasize bicycles and pedestrian modes of transportation rather than automobiles
- **Program E.** Encourage lesser polluting transportation alternatives through the construction of bikeways and the provisions of public transit

Santa Cruz County Municipal Code

Chapter 5.52, *Trip Reduction*, of the County's Municipal Code outlines a plan to reduce vehicle trips. A purpose of the plan is to improve air quality. Additionally, Chapter 16.92, *Environmental Principles and Policies to Guide County Government*, includes a policy to ensure that future development does not create unacceptable levels of air pollution.

3.2.3 Methodology and Significance Thresholds

Methodology

The analysis of air quality impacts associated with the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* follows the guidance and methodologies recommended in the MBARD Guidelines and in Appendix G of the *CEQA Guidelines*.

The Project's construction criteria pollutant emissions are estimated using the Roadway Construction Emissions Model (RCEM) developed by the Sacramento Metropolitan Air Quality Management District and based on construction assumptions provided by the Project engineer. These assumptions include anticipated construction equipment, schedule, and earth movement, which are summarized in Section 2.6, *Project Construction*.

The following scenarios were modeled separately to determine the estimated construction emissions for both the Ultimate Trail Configuration and the optional first phase Interim Trail. As described in Section 2.4.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, implementing the Interim Trail includes three parts: (1) removal of the rail and construction of the Interim Trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

- Construction of the Ultimate Trail Configuration (the estimates will also be used to represent Part 3 of the optional Interim Trail, which is construction of the Ultimate Trail Configuration)
- Construction of the optional Interim Trail part 1, which includes demolition of the rail and construction the Interim Trail in generally the same location
- Construction of the optional Interim Trail part 2, which includes demolition of the Interim Trail and rebuilding the rail line

Model defaults were assumed for the Ultimate Trail Configuration and optional Interim Trail schedules of linear construction activities over the estimated construction periods (24 months each for the Ultimate Trail Configuration and implementation of optional Interim Trail; 48 months for demolition of optional Interim Trail and rebuilding the rail line). This is conservative because the 3-month construction period for Segment 8 would involve only minor improvements.

As shown in **Table 2-2** and **Table 2-4** in Section 2.6, the Ultimate Trail Configuration would disturb a total of 3 acres, and the optional Interim Trail would disturb 3.5 acres during both the implementation of Interim Trail (Part 1) and removal of the Interim Trail removal (Part 2). These tables also summarize required earthwork and trail material import. For purposes of analysis, it is assumed that the amount of material exported for demolishing the rail line (Part 1) would be similar to the amount of material imported for rebuilding the rail line (Part 2). Based on the soil excavation and total export quantities provided in **Table 2-4**, it is assumed that approximately 10,754 cubic yards of material would be exported as part of rail demolition (Part 1) and imported for rebuilding the rail (Part 2).

As described in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, for implementation of Interim Trail (Part 1), if hazardous materials are identified through the planned soil testing, any hazardous soil would be disposed as an appropriate disposal facility. As described in Section 3.7.4, *Project Impact Analysis*, for Impact HAZ-1, there are appropriate disposal facilities located in Livermore and Stockton, approximately 58 miles and 77 miles (respectively) northeast of the Project corridor, respectively. The quantity of contaminated material is currently unknown. Therefore, although not anticipated but to provide a conservative analysis, it is assumed that 50% of excavated soils would be disposed locally (e.g., City Resource Recovery Facility, County Buena Vista Landfill, Monterey Peninsula Landfill), all of which accept creosote treated wood (SWRCB 2022), and that 50% would be disposed outside the area in Stockton. It is similarly assumed that 50% of demolished rail line materials would be disposed locally and 50% would be disposed in Stockton.

The default construction fleet was modified based on the anticipated construction equipment fleet described in Section 2.6. The same equipment fleet is assumed for the Ultimate Trail Configuration

and optional Interim Trail. The average usage of each individual piece of equipment was reduced from the default of 8 hours per day to an average of 6 hours per day because the limited project size would limit the number of pieces of equipment that would operate simultaneously. Modeling conservatively also assumes implementation of the East Harbor Connection design option. Detailed construction modeling assumptions, including construction fleet for each activity, are available in **Appendix D**, Air Quality and GHG Modeling Assumptions.

Operational emissions and CO hotspots are qualitatively evaluated based on the nature of the Project, which provides a transportation alternative to vehicular travel. To determine if the Project would conflict with or obstruct implementation of the 2012–2015 AQMP, the Project is compared to growth assumptions in the City and County of Santa Cruz General Plans in accordance with the MBARD Guidelines.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of air quality and the other environmental topics. For air quality, *CEQA Guidelines* Appendix G states that "where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon" in making significance determinations. Thus, the City uses the MBARD Guidelines.

For the purposes of this EIR, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Conflict with or obstruct implementation of the adopted MBARD AQMP.

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. The MBARD Guidelines state that the 82 lbs/day threshold for construction emissions of PM_{10} is the threshold for both individual and cumulative impacts on local air quality. Projects that are inconsistent with the AQMP would result in a significant cumulative impact related to ozone emissions.

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.

3.2.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold A: Conflict with or obstruct implementation of the adopted MBARD AQMP.

Impact AIR-1 THE PROJECT WOULD NOT CONFLICT WITH OR OBSTRUCT IMPLEMENTATION OF THE ADOPTED MBARD AQMP. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

According to the MBARD Guidelines, a project would conflict with or obstruct implementation of the AQMP for the NCCAB if it is inconsistent with the growth assumptions included in the AQMP in terms of population, employment, or regional growth in vehicle miles traveled (VMT) (MBARD 2008). The Proposed Project does not contain a residential or commercial component and would, therefore, not increase the residential population or employment in the area.

Construction of the Ultimate Trail Configuration would generate temporary employment opportunities, which could be filled by the existing workforce in the City, County, or immediately surrounding areas such as the San Francisco Bay Area and Monterey Bay Area. No direct growth inducement is expected to result from Ultimate Trail Configuration implementation.

Additionally, the Project would provide improved and new alternative, non-motorized transportation opportunities that would likely result in a net decrease in regional VMT. The Project does not include new parking lots or other facilities that would encourage new vehicle trips to the Project corridor. As such, the trail would not induce new residential growth that would result in vehicle trips that were not accounted for in regional VMT projections modeled by the Association of Monterey Bay Area Governments.

The AQMP outlines strategies for reducing vehicle-related emissions of ozone precursors. Unlike previous versions of the AQMP that focused on alternative modes of transportation and reducing VMT, the 2012–2015 AQMP mobile source programs focus on direct emissions reduction. Programs include roundabout design and construction, the application of adaptive traffic signal control at intersections, incentives for purchase or lease of electric vehicles, funding for electric vehicle infrastructure, and voluntary accelerated vehicle retirement programs for older vehicles. These programs focus on the choices of individual consumers. Implementation of the Ultimate Trail Configuration is not related to consumer vehicle choice, and the Ultimate Trail Configuration would have no impact on implementation of the AQMP mobile source programs.

As part of the proposed Monterey Bay Sanctuary Scenic Trail Network, the Ultimate Trail Configuration would improve the regional bicycle and pedestrian network, which would encourage the use of non-motorized transportation, which could lead to more walking and use of bicycles and other non-motorized modes of travel (e.g., skateboards) in general in the regional mode split. Therefore, the Ultimate Trail Configuration supports the emissions reduction goals of the AQMP.

This impact of the Ultimate Trail Configuration would be **less than significant** because the Ultimate Trail Configuration would be consistent with AQMP growth assumptions and emissions reduction goals. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The impacts of *Optional First Phase: Trail on the Rail line (Interim Trail)* would be similar to that described above for the Ultimate Trail Configuration because operation of the Interim Trail would be the same as the Ultimate Trail Configuration. The Interim Trail would not result in any population growth and would support the emissions reduction goals of the AQMP. Therefore, as with the Ultimate Trail Configuration, impacts of implementation of the Interim Trail related to air quality plans would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

The impacts of demolishing the Interim Trail would be similar to those described above for the Ultimate Trail Configuration. This part of the optional Interim Trail would involve additional construction compared to the Ultimate Trail Configuration but would not induce population growth or include a permanent source of operation emissions. This part of the optional Interim Trail would not provide an active transportation facility but would facilitate implementation of the Ultimate Trail Configuration. Similar to the Ultimate Trail Configuration, it would not result in any population growth and would ultimately support the emissions reduction goals of the AQMP. Therefore, as with the Ultimate Trail Configuration, impacts from demolition of the Interim Trail and rebuilding the rail line related to air quality plans would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration as part of the optional Interim Trail would be similar to that described above for Ultimate Trail Configuration without the optional Interim Trail. Refer to the discussion above for Impact AIR-1 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant.** No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Implementing the Interim Trail requires three construction periods for each of the three parts. However, the separate construction periods would take place over a longer period of time. As stated in Section 2.6.2, it is estimated that the Interim Trail could be in use for approximately 25 years before it would be demolished, and the Ultimate Trail Configuration would be constructed.

Similar to the Ultimate Trail Configuration, trail operation would not result in population growth, and operation of the Interim Trail would be similar to the Ultimate Trail Configuration and would also support the emissions reduction goals of the AQMP. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project impacts related to consistency with the AQMP would be similar with and without the *Optional First Phase: Trail on the Rail line (Interim Trail)* because operation of the Project as an active transportation route would be the same with or without the optional Interim Trail.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because no change in operation would occur as a result of this design option, and it would still be a **less than significant** impact with no mitigation required.

Threshold 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.

Impact AIR-2 THE PROJECT WOULD NOT RESULT IN A CUMULATIVELY CONSIDERABLE NET INCREASE OF ANY CRITERIA POLLUTANT FOR WHICH THE REGION IS DESIGNATED NON-ATTAINMENT. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction and operational impacts of the Ultimate Trail Configuration are addressed separately below.

Construction

The NCCAB is in non-attainment of the state PM_{10} standard. Regarding construction impacts, the MBARD Guidelines state that the 82 lbs/day threshold for construction emissions of PM_{10} is the threshold for both individual and cumulative impacts on local air quality since the background concentration reflects the collective contribution of PM_{10} from nearby sources.

Construction of the Proposed Project would result in the temporary generation of air pollutants from operation of heavy construction equipment and generation of fugitive dust in the construction area, as well as emissions from worker vehicle trips and hauling of import and export materials. Maximum daily emissions levels associated with construction of the Ultimate Trail Configuration are shown in **Table 3.2-5**. The MBARD has only adopted a quantitative threshold for PM_{10} emissions during construction; however, emissions from the other criteria pollutants are also provided for informational purposes.

Table 3.2-5 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) – Ultimate Trail Configuration

Construction Phase	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	2	22	21	<1	11	3
Grading/Excavation	3	31	34	<1	11	3
Drainage Installation and Road Base Construction	3	33	30	<1	11	3
Asphalt and Concrete Installation	2	24	19	<1	1	1
Maximum Daily Emissions	**3**	**33**	**32**	**<1**	**11**	**3**
MBARD Threshold	—	—	—	—	82	—
Significant Impact?	—	—	—	—	No	—

Source: RCEM Version 9.0.0.

Emission quantities are rounded to the nearest whole number. Exact values are provided in **Appendix D**.

CO = carbon monoxide; MBARD = Monterey Bay Air Resources District; NO_x = oxides of nitrogen; PM_{10} = particulate matter 10 microns or less in size; $PM_{2.5}$ = particulate matter 2.5 microns or less in size; SO_x = sulfur oxides; VOC = volatile organic compound

As shown in **Table 3.2-5**, construction of the Ultimate Trail Configuration is estimated to generate a maximum of 11 lbs/day of PM_{10} during construction, which is well below the MBARD's threshold of 82 lbs/day. The MBARD does not identify quantitative thresholds for other criteria pollutants during construction. Construction projects using typical construction equipment, such as dump trucks, scrapers, bulldozers, compactors, and front-end loaders that temporarily emit precursors of ozone (i.e., VOC or NO_x), are accommodated in the emission inventories of state- and federally required air plans and would not have a significant impact on the attainment and maintenance of ozone AAQS. However, a project that would use non-typical equipment would have the potential to result in a significant impact related to emissions of VOCs or NO_x. The Ultimate Trail Configuration would employ typical construction equipment. It would not require any non-typical construction equipment or techniques that have not been accounted for in the NCCAB emissions inventories.

Further, as described in Section 2.6 under *General Methodology*, the following best management practices would be implemented during project construction to reduce in compliance with the MBARD's Rule 402 (Nuisance) and *CEQA Guidelines*:

- Limit grading activities during periods of high wind (over 15 miles per hour) or water for dust suppression
- Water active construction areas as needed based on the activity, soil, and wind exposure
- Apply soil stabilizers on inactive construction areas (disturbed lands unused for 4 consecutive days)
- Apply native hydro-seed or non-toxic binders to exposed areas after cut/fill operations
- Maintain at least 2-foot freeboard in haul trucks and cover all trucks hauling dirt, sand, or other loose materials
- Cover inactive storage piles
- Install perimeter protection (e.g., silt fence, fiber rolls) to prevent contaminated construction runoff from leaving the construction site
- Install project storm drain catch basin and inlet protection (e.g., inlet filters, fiber rolls, gravel bags)
- Implement additional measures in the Soil Management Plan to be prepared by the City, County or their construction contractor

The Ultimate Trail Configuration would result in a less than significant impact related to maximum daily criteria pollutant emissions during construction. Because the emissions would be below the applicable health-based significance thresholds, no adverse health effects would occur. No mitigation is required. Because the Project would be below the PM_{10} threshold and would not require any construction practices that would be atypical, the Ultimate Trail Configuration would not result in cumulatively considerable impact during construction.

Operation

Operation of the Ultimate Trail Configuration would consist of a new pedestrian and bicycle facility, which would be used as a form of active transportation. The Ultimate Trail Configuration does not include any new parking or other facilities that would generate new vehicular trips. The Project would likely result in a net decrease in criteria pollutant emissions. Maintenance of the trail would result in occasional criteria pollutant emissions from operation of landscaping or maintenance equipment or repainting or coating of facilities. However, emissions would be minimal on the limited number of days that maintenance would occur. Additionally, as described in Impact AIR-1 above, the Ultimate Trail Configuration would be consistent with the AQMP. Thus, a cumulatively

considerable net increase in criteria pollutant emissions would not occur. This impact of the Ultimate Trail Configuration would be **less than significant.** No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Similar to the Ultimate Trail Configuration, construction of the optional Interim Trail would result in the temporary generation of air pollutants from operation of heavy construction equipment and generation of fugitive dust in the construction area, as well as emissions from worker vehicle trips and hauling of import and export materials. Maximum daily emissions levels associated with removing the rail line and building the Interim Trail are shown in **Table 3.2-6**.

Table 3.2-6 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) – Implementation of Interim Trail (Rail Removal and Trail Construction)

Construction Phase	VOC	CO	NOx	SOx	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	2	22	17	<1	11	3
Grading/Excavation	3	30	28	<1	11	3
Drainage Installation and Road Base Construction	3	32	27	<1	11	3
Asphalt and Concrete Installation	2	24	17	<1	1	1
Maximum Daily Emissions	**3**	**32**	**27**	**<1**	**11**	**3**
MBARD Threshold	–	–	–	–	82	–
Significant Impact?	–	–	–	–	No	–

Source: RCEM Version 9.0.0.
Emission quantities are rounded to the nearest whole number. Exact values are provided in **Appendix D**.
CO = carbon monoxide; MBARD = Monterey Bay Air Resources District; NO_x = oxides of nitrogen; PM_{10} = particulate matter 10 microns or less in size; $PM_{2.5}$ = particulate matter 2.5 microns or less in size; SO_x = sulfur oxides; VOC = volatile organic compound

As shown in **Table 3.2-6**, construction of the optional Interim Trail (rail removal and trail construction) is estimated to generate a maximum of 11 lbs/day of PM_{10} during construction, which is well below the MBARD's threshold of 82 lbs/day. Maximum daily emissions would be similar to the Ultimate Trail Configuration. Similar to the Ultimate Trail Configuration, implementation of optional Interim Trail would also not require any non-typical construction equipment or techniques that have not been accounted for in the NCCAB emissions inventories and would include implementation of the best management practices listed in Section 2.6 under *General Methodology*. Implementation of the optional Interim Trail would result in a **less than significant** impact related to maximum daily criteria pollutant emissions during construction. No mitigation is required.

OPERATION

Operation of the optional Interim Trail as an active transportation route would be similar to the Ultimate Trail Configuration. This impact would be **less than significant.** No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to the Ultimate Trail Configuration, as well as Part 1 of implementing the Interim Trail, demolition of the Interim Trail and rebuilding the rail line (Part 2) would result in the temporary generation of air pollutants from operation of heavy construction equipment and generation of fugitive dust in the construction area and emissions from worker vehicle trips and hauling of import and export materials. Maximum daily emissions levels associated with demolition of the Interim Trail and rebuilding the rail line are shown in **Table 3.2-7**.

Table 3.2-7 Estimated Construction Daily Maximum Air Pollutant Emissions (lbs/day) – Demolition of Interim Trail and Rebuilding Rail Line

Construction Phase	VOC	CO	NOx	SOx	PM_{10}	$PM_{2.5}$
Grubbing/Land Clearing	2	22	9	<1	10	2
Grading/Excavation	3	27	13	<1	10	2
Drainage Installation and Road Base Construction	3	31	14	<1	10	2
Asphalt and Concrete Installation	2	24	10	<1	<1	<1
Maximum Daily Emissions	**3**	**31**	**14**	**<1**	**10**	**2**
MBARD Threshold	–	–	–	–	82	–
Significant Impact?	–	–	–	–	No	–

Source: RCEM Version 9.0.0.

Emission quantities are rounded to the nearest whole number. Exact values are provided in **Appendix D**.

CO = carbon monoxide; MBARD = Monterey Bay Air Resources District; NO_x = oxides of nitrogen; PM_{10} = particulate matter 10 microns or less in size; $PM_{2.5}$ = particulate matter 2.5 microns or less in size; SO_x = sulfur oxides; VOC = volatile organic compound

As shown in **Table 3.2-7**, demolition of the Interim Trail and rebuilding the rail line is estimated to generate a maximum of 10 lbs/day of PM_{10} during construction, which is well below the MBARD's threshold of 82 lbs/day and slightly less than the Ultimate Trail Configuration and Part 1 of implementation the optional Interim Trail. Similar to the Ultimate Trail Configuration, demolition of the Interim Trail and rebuilding the rail line would not require any non-typical construction equipment or techniques that have not been accounted for in the NCCAB emissions inventories and would include implementation of the best management practices listed in Section 2.6 under *General Methodology*. Therefore, demolition of the Interim Trail and rebuilding the rail line would result in a **less than significant** impact related to maximum daily criteria pollutant emissions during construction. No mitigation is required.

OPERATION

Demolition of the Interim Trail and rebuilding the rail line would not have operational impacts because there would be no trail and no sources of operational emissions.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration with the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration and provided in **Table 3.2-5**. Refer to the discussion above for Impact AIR-2 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. Emissions in **Table 3.2-5** are conservative because increased emissions standards for construction equipment would likely reduce maximum daily emissions if the Ultimate Trail Configuration were to occur at the later date. Following construction, operation would be identical to the Ultimate Trail Configuration as addressed above. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Total construction days would increase with implementation of the optional Interim Trail compared to the Ultimate Trail Configuration without the optional Interim Trail. However, maximum daily construction emissions would not exceed the MBARD thresholds during any phase of construction. Additionally, the separate construction periods would take place over a longer period of time. As

stated in Section 2.6.2, it is estimated that the Interim Trail could be in use for approximately 25 years before it is demolished and the Ultimate Trail Configuration is constructed.

Operation of the Project with the optional Interim Trail would be the same as the Ultimate Trail Configuration and would not result in significant operational emissions. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would result in more construction-related emissions overall because there would be two additional construction periods. However, the Proposed Project with or without the optional Interim Trail would not result in significant construction or operational emissions. This impact would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because implementation of this option was accounted for in the Project modeling results in **Table 3.2-5**, and it would still be a **less than significant** impact with no mitigation required.

Threshold C:	Expose sensitive receptors to substantial pollutant concentrations.

Impact AIR-3 THE PROJECT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

There are several residences, considered sensitive receptors, located along the Project corridor, primarily along Segment 9. As such, Ultimate Trail Configuration construction activities would occur near sensitive receptors and potentially expose these receptors to short-term criteria pollutant emissions.

The pollutant of primary concern during construction is diesel particulate matter. However, as shown in **Table 3.2-5**, construction-related emissions associated with the Ultimate Trail Configuration would be minimal, as indicated by compliance with the PM_{10} threshold. Emissions of PM_{10} would be well below the MBARD threshold during all construction activities. The MBARD threshold for PM_{10} is established for regional compliance with the state and federal AAQS, which are intended to protect public health. Because the emissions for the Ultimate Trail Configuration are below the applicable MBARD threshold, it would not contribute to regional long-term health impacts related to non-attainment of the AAQS.

The MBARD has not established thresholds for the remaining pollutants; however, construction emissions are minimal. The NCCAB is in attainment or unclassified for the other criteria pollutants. Additionally, the Project construction zone would be linear. An individual existing receptor would be exposed to Project construction for only a few days during each construction activity. The Project's short-term, temporary, and minimal construction emissions for the Ultimate Trail Configuration would not result in any regional non-attainment of any pollutant that could result in health impacts.

As discussed in Section 3.2.1, *Existing Conditions*, the criteria pollutants also have the potential to result in health impacts, such as headaches or throat irritation, at the time of exposure. However, individual exposure levels and individual reactions to exposure to pollutant emissions from the Project cannot be feasibly determined. As previously described, the concentration of criteria pollutants at any given time depends on a variety of factors, including ambient traffic levels and other emissions sources, weather conditions that affect pollutant formation and dissipation, and time of day or year. Additionally, concentrations of ozone precursors along the Project corridor do not indicate levels of ozone exposure along the Project corridor because ozone is not necessarily formed there, as NO_x and VOC may be carried away before forming ozone (USEPA 2018).

Following construction, the Ultimate Trail Configuration would not include any stationary sources or air pollutants, such as an exhaust pipe at a factory, which is a fixed emissions source. Additionally, the Ultimate Trail Configuration would not result in new vehicle trips and would not contribute to any potential CO hotspot. As discussed under Impact AQ-2, Project operational emissions of all criteria pollutants would be minimal. Therefore, the Project would not significantly contribute to potential regional health impacts related to AAQS non-attainment. Operation of the Ultimate Trail Configuration would not expose sensitive receptors to substantial pollutant concentrations. This impact would be **less than significant.** No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

As with the Ultimate Trail Configuration, the closest sensitive receptors to the optional Interim Trail are residences located adjacent to the Project corridor in Segment 9. Similar to the Ultimate Trail Configuration, construction emissions from implementation of the optional Interim Trail would be below the MBARD threshold for PM_{10} and would not contribute to regional long-term health impacts related to non-attainment of the AAQS. Construction of the Interim Trail would also be linear, and individual receptors would be exposed to construction for only a few days during each construction activity. Short-term, temporary, and minimal construction emissions for the optional Interim Trail would not result in any regional non-attainment of any pollutant that could result in health impacts.

Following construction, operation of the optional Interim Trail would be the same as the Ultimate Trail Configuration and would not include any stationary sources of air pollutants or contribute to any potential CO hotspot. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Potential impacts related to sensitive receptors during construction would be similar to the Ultimate Trail Configuration and Part 1 of the Interim Trail (rail removal and trail construction) because a similar construction fleet and activities would be required. Refer to the discussions above. Following these construction activities, this part the optional Interim Trail would not operate as an active transportation corridor because there would be no trail, and it would not include any stationary sources of air pollutants or contribute to any potential CO hotspot. This impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration with the optional Interim Trail would be similar to that described above for Ultimate Trail Configuration without the optional Interim Trail. Refer to the discussion above for Impact AIR-3 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

An additional 72 months of construction would be required to implement the optional Interim Trail compared to the Ultimate Trail Configuration without the optional Interim Trail. Therefore, sensitive receptor exposure to construction emissions would increase. However, construction would take place over decades, and emissions during all phases would be well below MBARD standards. Operation of the trail with the optional Interim Trail would be similar to the Ultimate Trail Configuration and would not expose sensitive receptors to any pollutant sources. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Total sensitive receptor exposure to air pollutants would increase with the optional Interim Trail because total construction would increase, but the emissions would still be less than significant. Operation of the Proposed Project would be the same with or without the optional Interim Trail. This impact would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because no change in operation would occur as a result of this design option, and construction of this option was accounted for in Ultimate Trail Configuration modeling. This impact would still be a **less than significant** impact with no mitigation required.

Threshold D:	Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Impact AIR-4 THE PROJECT WOULD NOT RESULT IN OTHER EMISSIONS (SUCH AS THOSE LEADING TO ODORS) ADVERSELY AFFECTING A SUBSTANTIAL NUMBER OF PEOPLE. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Operation of heavy equipment during construction has the potential to result in odors from diesel construction equipment exhaust. However, as shown in **Table 3.2-5**, emissions of sulfurous gases (SO_x), the main source of odors from construction equipment, would be extremely limited during construction (MBARD 2008). Additionally, due to the linear nature of the Project, very few existing receptors would be located within a few hundred feet of the active construction area on any given day.

Following construction, the Project would accommodate pedestrians and bicyclists, who typically do not generate odors. As described in Section 2.4, *Project Characteristics*, the trail would extend past several areas with existing trash receptacles, including Main Beach, Santa Cruz Harbor, and Simpkins

Swim Center. Additional trash receptacles, including recycling receptacles and dog waste stations, would be added at four road crossings (Mott Avenue, Seabright Avenue, 7th Avenue, 17th Avenue). Trash receptacles would be emptied, and waste collection bags would be restocked regularly as part of train maintenance. As a result, odors from animal waste would be minimal.

Therefore, the Ultimate Trail Configuration would not create objectionable odors affecting a substantial number of people. The impact would be **less than significant.** No mitigation is required.

Optional First Phase: Trail on the Rail line (Interim Trail)

1) Implementation of Interim Trail

Potential odor impacts related to construction (rail removal and trail construction) and trail operation of the optional Interim Trail would be similar to the Ultimate Trail Configuration because a similar construction fleet would be required, and operation of the trail would be the same under this alternative. Refer to the discussion for the Ultimate Trail Configuration above.

Implementation of the Interim Trail would not create objectionable odors affecting a substantial number of people. The impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Potential odor impacts related to demolition of the Interim Trail and rebuilding the rail line would be similar to the Ultimate Trail Configuration and Interim Trail Part 1 (rail removal and trail construction) because a similar construction fleet would be required. Refer to the discussion above. This part of the optional Interim Trail would not include operation as an active transportation corridor but would not include any operational sources of odor.

Demolition of the Interim Trail and rebuilding the rail line would not create objectionable odors affecting a substantial number of people. The impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration with the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration without the optional Interim Trail. Refer to the discussion above for Impact AIR-4 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

An additional 72 months of construction would be required with implementation of the optional Interim Trail. Therefore, sensitive receptor exposure to construction odors would increase. However, construction would take place over decades, and emissions during all phases would be minimal. Operation of the trail with the optional Interim Trail would be identical to the Ultimate Trail Configuration and would not expose sensitive receptors to any significant sources of odor. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Total potential sensitive receptor exposure to odor would increase with the optional Interim Trail because total construction would increase. However, potential odors under both options would be

minimal. Operation of the Proposed Project would be the same with or without the optional Interim Trail. This impact would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because no change in construction or operation would occur as a result of this design option, and it would still be a **less than significant** impact with no mitigation required.

3.2.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
AIR-1. The Project would not conflict with or obstruct implementation of the adopted MBARD AQMP.	LTS	LTS Similar	LTS Similar	LTS Similar
AIR-2. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is designated non-attainment.	LTS	LTS Similar	LTS Similar	LTS Similar
AIR-3. The Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	LTS Similar	LTS Similar	LTS Similar
AIR-4. The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	LTS Similar	LTS Similar	LTS Similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.
The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.
The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.
NI = No Impact
LTS = Less than Significant without Mitigation
LTSM = Less than Significant with Mitigation
SU = Significant & Unavoidable
MM = Mitigation Measure

3.3 Biological Resources

This section evaluates potential impacts relating to biological resources within and around the Project corridor. This analysis is based on observations made during a series of surveys between October 2021 and June 2022, and a review of available literature and data for known and potentially occurring biological resources. This section includes an analysis of sensitive habitats, including wetlands and "other waters[1]", and sensitive plants and wildlife that may be impacted by the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)*. **Table 3.3-1** presents a summary of potential impacts related to biological resources. The analysis was conducted by qualified biologists[2] with EcoSystems West Consulting Group (refer to Section 6.1, *List of Preparers*), and supporting documentation is included in **Appendix E**.

Table 3.3-1 Summary of Project Impacts on Biological Resources[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
BIO-1. The Project could adversely affect State Endangered and Federally Threatened Santa Cruz tarplant.	Potentially Significant	BIO-1a,b BIO-9a,b,c	Less than Significant with Mitigation
BIO-2. The Project could adversely affect monarch butterfly and autumnal and/or wintering roost sites.	Potentially Significant	BIO-2 BIO-9a,b,c	Significant and Unavoidable
BIO-3. The Project could adversely affect sensitive fish species (tidewater goby, central California coast coho salmon, and central California coast steelhead), critical habitat, and coho Essential Fish Habitat (EFH).	Potentially Significant	BIO-2 BIO-9a,b,c BIO-10a,b	Less than Significant with Mitigation
BIO-4. The Project could adversely affect western pond turtle and Santa Cruz black salamander, if present.	Potentially Significant	BIO-2 BIO-9a,b,c BIO-10a,b	Less than Significant with Mitigation
BIO-5. The Project would adversely affect sensitive and native nesting bird species during construction and operation.	Potentially Significant	BIO-2 BIO-5 BIO-9a,b,c	Less than Significant with Mitigation
BIO-6. Project construction could adversely affect sensitive and common roosting bat species that may use coast live oak woodland and other trees along the alignment.	Potentially Significant	BIO-2 BIO-6 BIO-9a,c	Less than Significant with Mitigation
BIO-7. The Project would adversely affect San Francisco Dusky-footed woodrat.	Potentially Significant	BIO-2 BIO-7 BIO-9a,c	Less than Significant with Mitigation
BIO-8. The Project could adversely affect marine mammals, including southern sea otter.	Potentially Significant	BIO-2 BIO-9a,c BIO-10b	Less than Significant with Mitigation

[1] Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are considered "other waters."

[2] A qualified biologist shall have a minimum of 5 years of academic training and professional experience in biological sciences and related resource management activities with a minimum of 2 years conducting surveys for each species that may be present within the study area. The biologists who evaluated the study area possessed considerably more experience with biological resources, CDFW and USFWS standards and protocols, have been authorized on previous projects, and are trained and recognized experts on specific resources.

Table 3.3-1 Summary of Project Impacts on Biological Resources[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
BIO-9. The Project would result in adverse effects to riparian habitat, other sensitive natural communities, and Coastal Act ESHA.	Potentially Significant	BIO-9a,b,c	Less than Significant with Mitigation
BIO-10. The Project would result in adverse effects to palustrine emergent wetlands and aquatic/riverine habitats.	Potentially Significant	BIO-9a,b,c BIO-10a,b	Less than Significant with Mitigation
BIO-11. The Project would interfere with wildlife movement.	Potentially Significant	BIO-2 BIO-9a,b,c BIO-10a,b	Significant and Unavoidable
BIO-12. The Project would conflict with policies and ordinances protecting trees, including the City of Santa Cruz Heritage Tree Ordinance and County of Santa Cruz Significant Tree Ordinance.	Potentially Significant	BIO-9a,b,c	Significant and Unavoidable

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.3.1 Existing Conditions

Regional Setting

The Project study area[3] is situated within the urbanized City of Santa Cruz and unincorporated Live Oak community in Santa Cruz County. The alignment is positioned on the first marine terrace above the Pacific Ocean within the Santa Cruz Hydrologic Area (HA) and San Lorenzo and Soquel Hydrologic Sub-Areas (HAS) [California Interagency Watershed Mapping Committee (IWMC) 2004]. This portion of the Pacific Ocean is part of the Monterey Bay National Marine Sanctuary.

The City of Santa Cruz and Live Oak community are characterized by urban, light industrial, and residential development. The intersecting drainages and associated open space and parks provide small and disjunct naturalized areas.

The regional aquatic features vary in their origin. The San Lorenzo River has headwaters in the upper coastal Santa Cruz Mountains east of Ben Lomond Mountain. Several smaller watercourses including Pilkington Creek, Woods Creek, and Leona Creek originate in the immediate coastal foothills or on the first or second terraces of the urbanized cityscape. Many of these features are fragmented with some reaches conveyed below the surface in underground pipes and culverts. In this urbanized and highly fragmented setting, other significant but somewhat disturbed natural vegetation communities include coast live oak woodland and forest, coastal terrace prairie (native grassland), and non-native grassland. Non-native forest and areas landscaped with ornamental vegetation are also present throughout the urbanized areas of the City of Santa Cruz and unincorporated Santa Cruz County. This mosaic provides limited but highly valuable habitat for resident and migratory wildlife, while maintaining a rich assortment of native and naturalized vegetation. Several designated open space areas within urban Santa Cruz support special-status plants and wildlife, and management plans have been developed for many of these areas to protect sensitive biotic resources.

[3] The Project study area was determined to be the Project footprint, including potential temporary and permanent impacts, and an approximately 100-foot buffer on each side of the corridor. We also conducted surveys of aquatic features (creeks and wetlands) up to 300 feet up and downstream of the Project corridor, where accessible.

The Mediterranean climate of the region supports intermittent precipitation from late fall through spring with approximately 30 inches of average annual precipitation. Winters are typically cool, and summers often include periods of persistent fog and high clouds, typically clearing by early afternoon. The Santa Cruz area typically has more than 300 days of sunshine and average daytime temperatures range from 13 to 26 degrees Celsius (56–79 F).

Project Corridor Setting

Overview

The immediate Project corridor passes through the southeastern corner of the City of Santa Cruz into unincorporated Live Oak and is situated almost entirely within areas of urban, light industrial, and residential development. The rail corridor varies between level, depressed, and elevated relative to the immediate surroundings. The alignment supports several distinct naturalized areas, and these are limited to the aquatic features and associated habitats that intersect the alignment, including: San Lorenzo River, Pilkington Creek, Woods Creek, Santa Cruz Harbor, Leona Creek, Unnamed Stream 1545 (a tributary to Schwan Lagoon), Schwan Lagoon, and associated Twin Lakes State Beach open space. In some locations, non-native trees intersect and line the corridor. Together, these areas provide habitat for the limited sensitive biological resources that are present along or near the alignment.

Literature Review

To obtain baseline knowledge of the biological resources along the Project corridor, qualified biologists reviewed relevant studies and information sources prior to conducting their field surveys. Based on the literature review, the biologists compiled a list of special-status plants and wildlife species with potential to occur along the proposed alignment and in the vicinity[4] (**Appendix E.1**). The following relevant studies and information are presented in alphabetical order by name or title of the source:

- Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan Draft Environmental Impact Report (EIR), Final EIR [Santa Cruz Regional Transportation Commission (RTC) 2013a, 2013b], and Final EIR Addendum (RTC 2014);
- Federally listed, proposed, and candidate species, designated critical habitat from U.S. Fish and Wildlife Service (USFWS) (2022a, 2022b, 2022c) and National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (Fisheries) (NOAA Fisheries 2006; NOAA Fisheries 1996); and from published Federal Registers, including an official species list for the Project (**Appendix E.2**);
- State-listed endangered, threatened and rare plants (CDFW 2022a) and animals (CDFW 2022b);
- USFWS National Wetlands Inventory (USFWS 2022d);
- CDFW Natural Communities (CDFW 2022c);
- CDFW Species of Special Concern (Bolster 1998, Shuford and Gardali 2008, Moyle et al. 2015, Thompson et al. 2016, CDFW 2022d, CDFW CNDDB 2022);
- CDFW Fully Protected Animals (CDFW 2022);
- CDFW Special Animals (CDFW CNDDB 2022);

[4] Following CNDDB and other standard survey protocols, the biologists reviewed distribution information for sensitive species to determine which species would have the potential to occur in or near the alignments and which species could be eliminated from consideration, based on vegetation and habitat types in the alignments and surroundings, locations of known occurrences, dispersal distances (for wildlife), and professional knowledge of the region and local sensitive species.

- California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (Tibor 2001, CNPS 2022);
- International Union for Conservation of Nature (IUCN) (2022);
- Birds of Conservation Concern (USFWS 2008a);
- Western Bat Working Group (WBWG 2017);
- Soil Survey of Santa Cruz County (Bowman and Estrada 1980; Soil Survey Staff NRCS USDA 2022);
- Local and regional floras (Thomas 1960; Munz and Keck 1973; Hickman 1993; Baldwin et al. 2012; Neubauer 2013);
- Records and maps of occurrences of special-status species and sensitive natural communities for the USGS 7.5-minute Davenport, Felton, Laurel, Loma Prieta, Santa Cruz, Soquel, and Watsonville West quadrangles maintained by the CNDDB of CDFW (CDFW 2022f) and by the Biogeographic Information and Observation System (CDFW 2022g);
- The Xerces Society of Invertebrate Conservation (Xerces Society) (2022a, 2022b);
- eBird database (eBird 2022);
- California Herps (Nafis 2022);
- County of Santa Cruz 1994 General Plan and Local Coastal Program (1994);
- City of Santa Cruz General Plan and Local Coastal Program (2012);
- City of Santa Cruz Creeks and Wetlands (2006); and
- Experts on specific local biological resources (Allaback 2016, Alley 2022, Dayton 2022, Heady 2018, Rinkert 2022, and Steiner 2018 and 2022).

Field Surveys

Qualified biologists conducted field surveys of the study area during fall 2021 and spring/summer 2022. **Appendix E.3** includes a list of all vascular plant species observed during 2022 surveys. **Appendix E.4** includes narratives for sensitive plant and wildlife species that are known or have potential to occur. **Appendix E.5** lists bird species observed by habitat.

The purpose of field surveys was to:

- Characterize habitat types, including sensitive habitats;
- Conduct an assessment of aquatic resources, including wetlands;
- Conduct a floristic-level rare plant survey for potential species listed in **Appendix E.1;**
- Assess the alignment for common and sensitive wildlife species and potential habitat (**Appendix E.1**); and
- Conduct a preliminary assessment of wildlife movement along and across the alignments.

The biologists conducted field surveys along the Project corridor on multiple occasions, utilizing the intuitive control method[5] for rare plant surveys, and focusing on known and potential habitat for sensitive wildlife resources. The biologists noted the presence of sensitive natural resources, potential habitat and habitat features, and wildlife sign[6] in field journals; and they documented occurrences using resource-grade GPS with sub-meter accuracy and with high-resolution photographs.

BOTANY/AQUATIC RESOURCES

During April and June 2022, a qualified plant ecologist identified all vascular plant species in identifiable condition to species or infraspecific taxon, regardless of their regulatory status (**Appendix E.3**). The identifications were facilitated by the use of keys and descriptions (Thomas

[5] Intuitive control method is a complete survey of habitat with the highest potential for supporting rare plants and a lesser survey of those areas less likely to support rare plants.

[6] Wildlife sign includes trails, tracks, scat, vocalizations, food caches, or other indications of presence.

1960, Munz and Keck 1973, Hickman 1993, and Baldwin et al. 2012). The timing of the surveys was adequate for identification of the special-status plant species listed in **Appendix E.1**.

Following the field surveys, the biologists characterized and mapped all habitat types occurring within the study area, and recorded data on physiognomy, dominant and characteristic species, topographic position, slope, aspect, substrate conditions, hydrologic regime, and evident disturbance for each habitat type. Classification of the habitat types on the site is based on field observations and the generalized plant community classification schemes (Holland 1986, Sawyer et al. 2009, CDFW 2022c).

The aquatic resources assessment was completed using protocols outlined in the U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region, Version 2.0 (USACE 2010). The USACE defines three criteria to delineate wetlands: (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. Because the proposed alignment occurs in the Coastal Zone, wetlands utilizing the Coastal Zone's "one parameter" criteria were also identified and mapped in the field using resource-grade GPS technology. A formal aquatic resources delineation will be completed prior to preparing regulatory permit applications for the Project.

WILDLIFE

The Project corridor was evaluated for the presence of the sensitive wildlife species listed in **Appendix E.1** including invertebrates, fish, amphibians, reptiles, birds, and mammals.

For invertebrates, the biologists identified potential habitat for the federal candidate monarch butterfly, listed as endangered by the International Union for Conservation of Nature (IUCN).

For fish species, biologists evaluated the occupied drainages (based on distribution information) that intersect the Project corridor to determine if the Project had the potential to impact the federally listed tidewater goby (*Eucyclogobius newberryi*), coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss*) or their habitat. Potential and known sensitive amphibian and reptile habitat were evaluated to determine if suitable habitat features were present.

For bird species, avian biologists conducted a reconnaissance bird survey to determine which birds might utilize the Project corridor, documented all bird species observed (**Appendix E.5**), noted breeding behavior, and documented nest sites. A comprehensive breeding bird survey was not conducted because nest sites for most avian species are dynamic, and nest locations vary from year to year. Biologists also reviewed eBird (2022) for other known occurrences of sensitive bird species.

Finally, the assessment included an evaluation of potential habitat for sensitive mammals. For San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), the Project corridor was examined for woodrat houses, woodrat sign, and recent activity. During night surveys, observations of individual woodrats was noted. All observations were documented using GPS. For sensitive and common bat species, biologists examined trees and bridges for bat roost features (such as senescent limbs, hollows, crevices, holes, and furrowed bark) or signs of bat presence (such as guano) and conducted 2 nights of emergence surveys with acoustic monitoring to record call signatures of bats. For sensitive marine mammals, including the federally listed southern sea otter (*Enhydra lutris nereis*), potential presence was evaluated based on EcoSystems West's ongoing multi-year surveys of the Santa Cruz Harbor (2007–2022) (McGinty 2022). Wildlife movement along the Project corridor was assessed by looking for and documenting observations of individual species and sign, including trails, tracks, and/or scat.

Floristic Inventory and Habitat Characterization

Using the methodology described above, a total of 108 species of vascular plants were observed within the study area. A complete species list of plants encountered during the focused special-status plant surveys is presented in **Appendix E.3**. Of these species, 36 are identified as native to the study area, while the remaining 72 species are considered either introduced or naturalized. A total of 23 non-native plants encountered within the study area are considered to be invasive species with "moderate to high" potential for substantial or severe ecological impacts on physical processes, plant and animal communities, and vegetation structure by the California Invasive Plant Council (Cal-IPC) (2022). Of these invasive species, 10 are graminoids (grass and grass-like plants) with very limited potential for eradication and control using conventional means (e.g., herbicides, mowing, hand pulling, goat grazing, etc.) due to their tolerance of disturbance and/or ability to produce an extensive annual seedbank.

One special-status plant species, the Santa Cruz tarplant (*Holocarpha macradenia*) (Federal Threatened, State Endangered, CRPR List 1B.1) (USFWS 2000) was identified at Twin Lakes State Beach immediately south of the rail corridor. This small population is located in degraded coastal terrace prairie grassland, immediately south of a narrow band of coast live oak and Monterey cypress trees abutting the rail corridor and north of a heavily used dirt walking path within Twin Lakes State Beach Park. A total of 20 flowering individuals were identified at this location on June 24, 2022. An additional population of 16 individuals was also identified approximately 200 feet south of this occurrence beyond the limits of the study area. Monterey cypress and Monterey pine are both considered CRPR List 1 special-status species in their native ranges, but are considered non-native and potential invasive species in Santa Cruz County.

Thirteen predominant habitat types were identified in the study area, and each type is discussed in greater detail below. **Figures 3.3-1** and **3.3-1a** through **3.3-1d** illustrate the extent of habitat types and terrestrial vegetation communities in the study area. **Table 3.3-2** shows acreages for each of these communities in the study area and along the trail alignments for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)*.

Vegetation classification was based on *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009) and *Preliminary Descriptions of the Terrestrial Communities of California* (Holland 1986); but has been modified as needed to accurately describe the existing habitats observed on-site, including habitat types not presented in the literature (e.g., ruderal) and areas not supporting naturally occurring vegetation (e.g., sandy beach, developed, ornamental/landscaped).

Table 3.3-2 Habitat Types in Rail Trail Segment 8/9 Study Area and Project Footprint

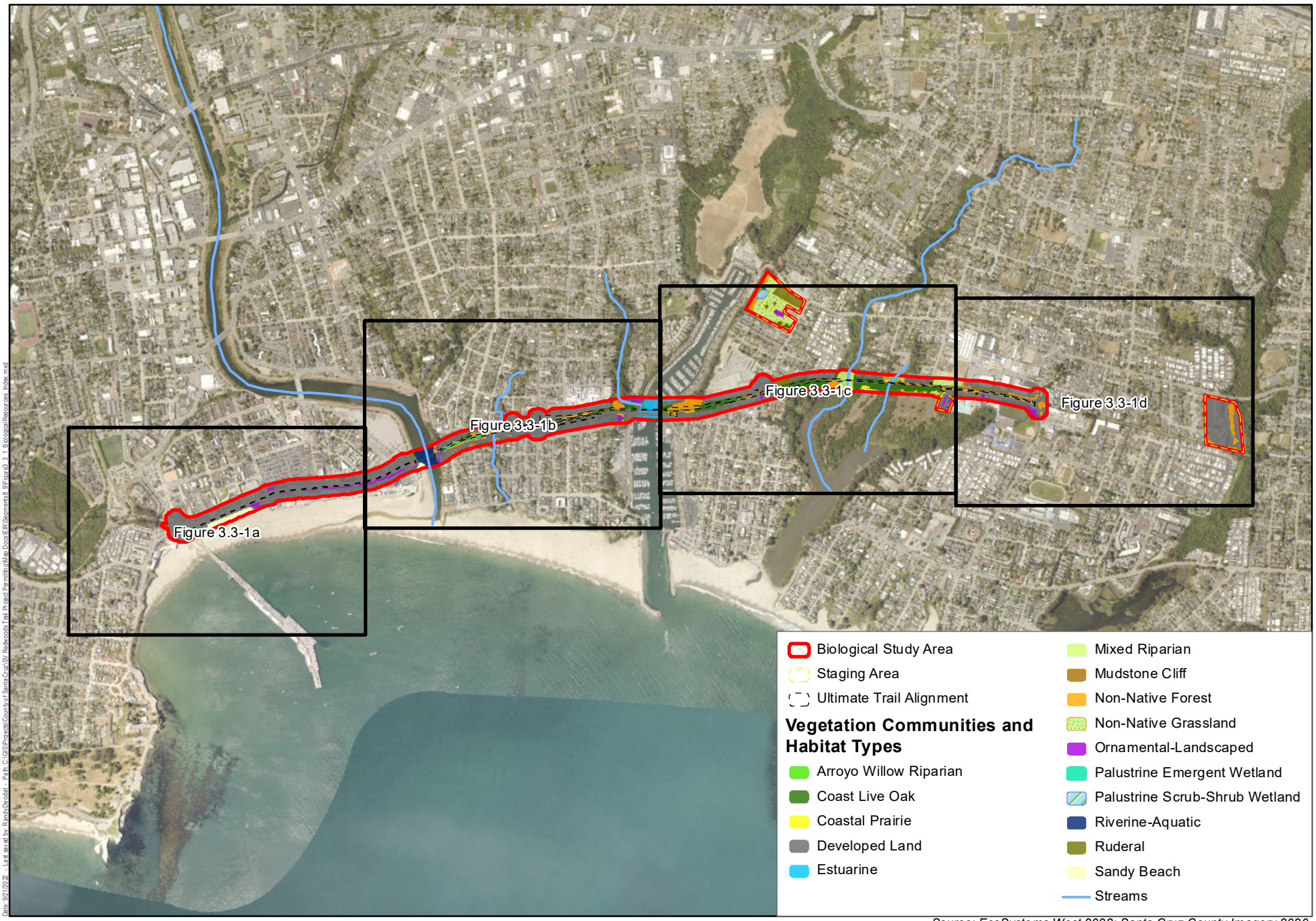
Habitat Type	Project Study Area[7] (Acres)	Project Footprint[8]		
		Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) (Acres)	Optional First Phase: Trail on the Rail Line (Interim Trail)	
			Part 1[a]	Part 1+3 [b]
Coast Live Oak Woodland and Forest	6.84	1.48	1.23	1.90
Mixed Riparian Forest	1.46	0.08	0.03	0.11
Arroyo Willow Riparian Forest	0.19	0.03	0.00	0.03
Palustrine Emergent Wetland	0.11	0.04	0.03	0.05
Palustrine Scrub-Shrub Wetland	0.44	0.00	0.00	0.00
Aquatic/Riverine	3.00	0.04	0.04	0.04
Coastal Terrace Prairie	0.28	0.00	0.00	0.00
Non-native Grassland	5.95	3.09	3.09	3.09
Non-native Forest	7.20	2.79	2.30	3.05
Sandy Beach/Mudstone	1.63	0.00	0.00	0.00
Ornamental/Landscaped	2.66	0.43	0.36	0.44
Developed	57.89	8.79	10.31	10.63
Ruderal	4.47	2.62	2.39	2.75
Total	**92.12**	**19.39**	**19.78**	**22.09**

[a] Part 1 is implementation of the Interim Trail, which includes removal of the rail track and ties and construction of the Interim Trail on the rail bed. Part 2 is demolition of the Interim Trail and rebuilding of the rail line.

[b] Part 3 is construction of the Ultimate Trail Configuration, which would be the same as described for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* plus the optional Interim Trail.

[7] The Project study area was determined to be the Project footprint, including potential temporary and permanent impacts, and an approximately 100-foot buffer on each side of the corridor. We also conducted surveys of aquatic features (creeks and wetlands) up to 300 feet up and downstream of the Project corridor, where accessible.

[8] The area evaluated is the Project footprint, including temporary and permanent impacts (the outermost boundary of Project activities).



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

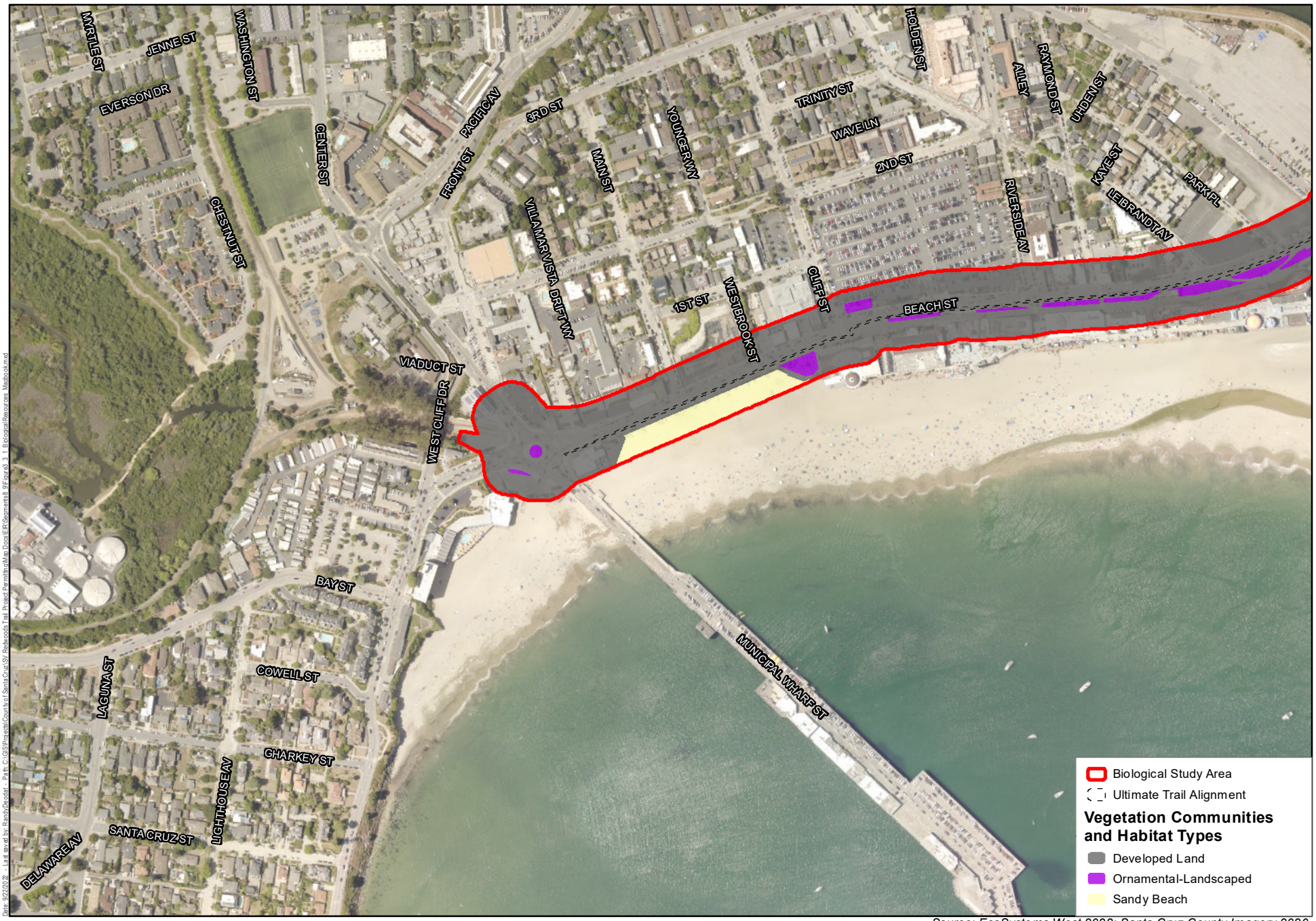
0 1,000 2,000

Feet

Figure 3.3-1

Habitat Types - Index

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

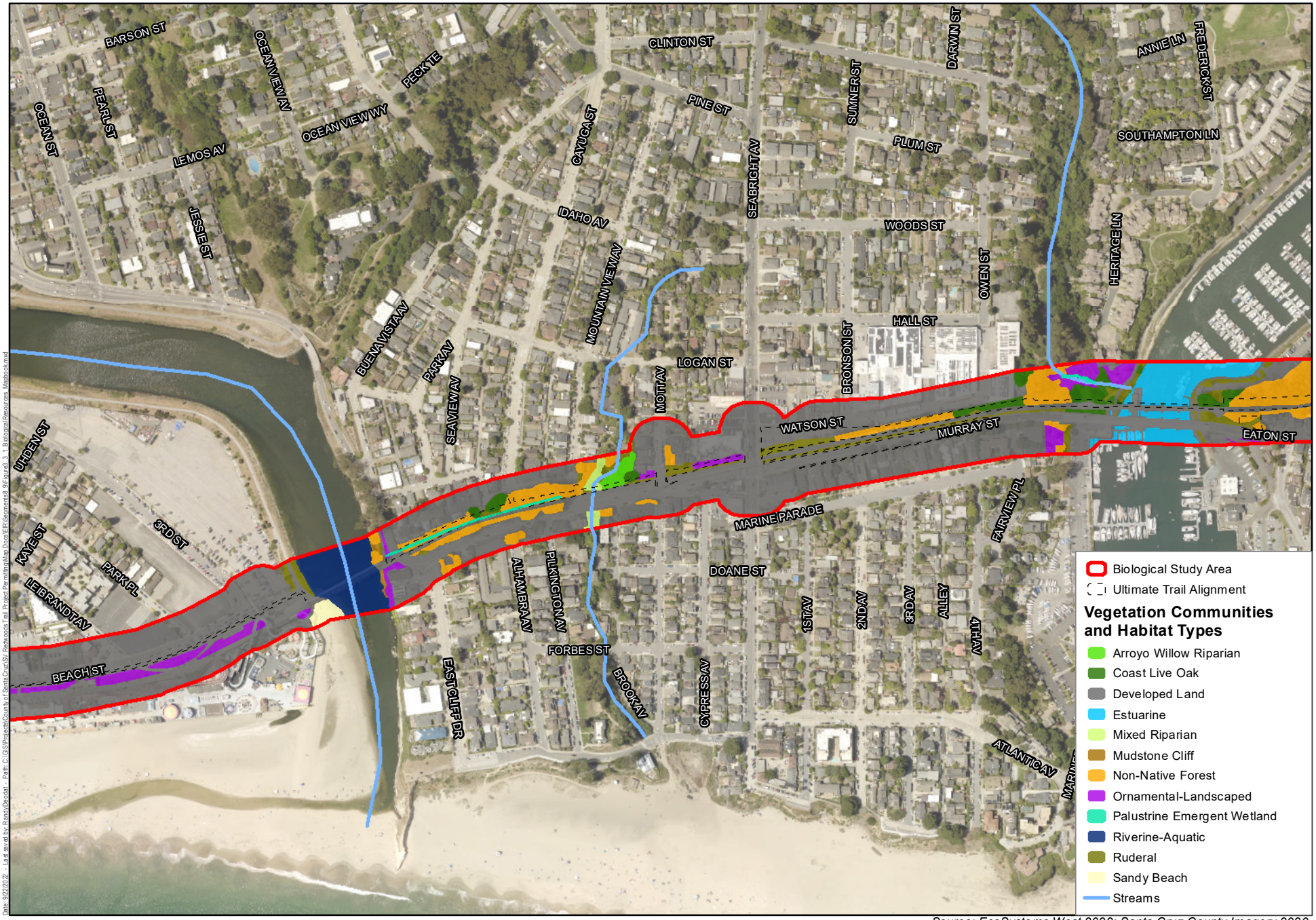
0 300 600

Feet

Figure 3.3-1a

Habitat Types

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

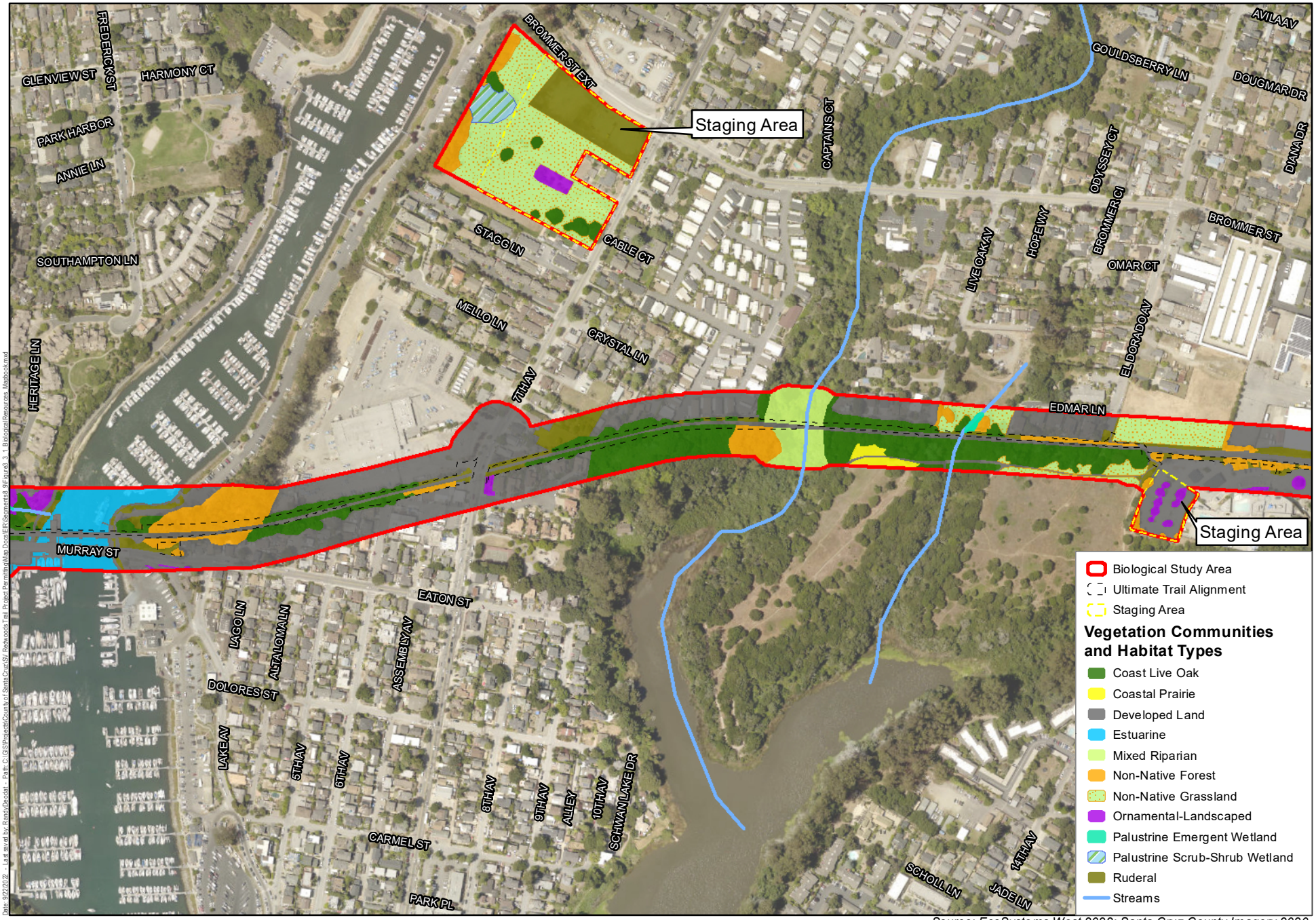
0 300 600

Feet

Figure 3.3-1b

Habitat Types

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

0 300 600

Feet

Figure 3.3-1c

Habitat Types

Coastal Rail Trail Segments 8 and 9

Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

0 300 600

Feet

Figure 3.3-1d

Habitat Types

Coastal Rail Trail Segments 8 and 9

COAST LIVE OAK WOODLAND AND FOREST

In the study area, coast live oak woodland and forest closely corresponds to the *Quercus agrifolia* Alliance and Association (Sawyer et al. 2009, CDFW 2022c), and to the Central Coast phase of the coast live oak forest type (Holland 1986). The overstory is comprised entirely of coast live oak (*Quercus agrifolia*) with a patchy herbaceous understory dominated by the non-native, weedy vines Canary ivy (*Hedera canariensis*) and English Ivy (*H. helix*). Other common understory associates include poison oak (*Toxicodendron diversilobum*), Pacific blackberry (*Rubus ursinus*), brome grasses (*Bromus* spp.), slender wild oat (*Avena barbata*), and veldt grass (*Ehrharta erecta*).

Coast live oak forests and woodlands in the study area are mostly fragmentary or planted, occurring in linear strips along the rail corridor abutting urbanized development. This physiognomic orientation ranges from scattered trees and patchy aggregations to dense closed-canopy forest.

In several areas, the coast live oak forest and/or woodland extends into naturalized areas, including private residential property north of the rail corridor and immediately west of the Santa Cruz Harbor, as well as public open space in the vicinity of Twin Lakes State Beach between 7th Avenue and Simpkins Swim Center. These contiguous, notable stands are situated on the relatively flat, first coastal terrace, which receives approximately 30 inches of annual rainfall and is subject to cool foggy summers.

The coast live oak woodlands/forests along the Project corridor, especially at Twin Lakes State Beach open space, are mature forests, rich in habitat features, such multi-tiered branches, with hollows, crevices, and peeling bark, and a dense understory. At the Twin Lakes State Beach open space, the coast live oak woodland/forest habitat type abuts coastal terrace prairie/non-native grassland, mixed riparian, and arroyo willow riparian habitat types, as well as the aquatic features of Leona Creek and nearby Schwan Lagoon. These ecotones or edge habitats[9] provide an abundance and variety of food sources because they have diverse plant species and microhabitat variability, including cover, shelter, and shade, as well as sun exposure for warmth and air flow for circulation. The edge habitats at Twin Lakes State Beach open space make any one habitat type more valuable to wildlife. Insectivorous, cavity-nesting, and ground-nesting birds are likely to use this habitat for nesting and foraging. Red-tailed hawk, red-shouldered hawk, Cooper's hawk, sharp-shinned hawk have all been observed there (eBird 2022) and are likely to utilize the coast live oak woodland for nesting. A pair of bald eagles is known to nest in the open space (eBird 2022), and a juvenile was observed foraging during field surveys. A pair of barn owls was observed flying out from and returning to a large oak tree on the embankment of Leona Creek, and two great horned owls were calling nearby. Biologists observed a number of San Francisco dusky-footed woodrat houses along the Project corridor in the oak woodland, an individual woodrat was observed during night surveys, and common and sensitive bat species were detected during emergence/acoustic surveys.

MIXED RIPARIAN FOREST

Over most of the study area, riparian vegetation corresponds to the mixed riparian forest habitat type, which is not described in Sawyer et al, CDFW, or Holland but represents an urbanized, mesic phase of mixed evergreen forest and *Salix lasiolepis* Alliance (Sawyer et al 2009, CDFW 2022c). This habitat type occurs along several prominent drainages within the study area including Pilkington Creek, Woods Creek, and Leona Creek. The overstory is dominated by native and non-native trees and arboreal shrubs including coast live oak, silver wattle acacia (*Acacia dealbata*), arroyo willow

[9] Edge habitats occur when two or more habitat types abut one another.

(*Salix lasiolepis*), ornamental coast redwood (*Sequoia sempervirens*), boxelder (*Acer negundo*) and big leaf maple (*Acer macrophyllum*). The arborescent to arboreal canopy is typically dense and often impenetrable, although openings of various sizes occur locally. The native woody vine Pacific blackberry is abundant and often very dense in the understory. Similar to the coast live oak woodland and forest habitat type, the invasive, non-native vines English ivy and Canary ivy are also prevalent. Few other understory species occur except in relatively open areas but poison oak, blackberry, and non-native grasses are common in all habitat types.

Riparian forest along the Project corridor provides pockets of relatively ecologically rich habitat for wildlife in that, compared to the developed surroundings, riparian vegetation provides a dense multi-tiered canopy with diverse foraging, roosting, sheltering, and/or nesting habitat. The riparian vegetation provides cover from predators and insulating properties that shelter wildlife species from the sun and prevailing weather patterns. The biologists observed a suite of wildlife species, including insects, amphibians, birds and mammals within the riparian forests along the Project corridor. Sierran treefrog (*Pseudacris sierra*) were observed, and other amphibian species such as common salamanders are likely to utilize these habitats. Migratory and resident bird species utilize the riparian habitats adjacent to the alignment (**Appendix E.5**). San Francisco dusky-footed woodrat houses and an individual woodrat was observed along the margins of the riparian forest at Leona Creek, and foliage-roosting bat species were detected during acoustic surveys.

As noted above, the riparian habitats abut coast live oak woodland and grasslands, forming edge habitats. The riparian forest also buffers adjacent aquatic habitats contributing shade, food, and sources of nutrients to the gulches, creeks, and lagoon. Structurally, downed trees and willow mats create scour pools that are important for birds, fish, amphibians, and aquatic insects.

ARROYO WILLOW RIPARIAN FOREST

The limited remaining riparian vegetation within the study area corresponds to the central coast arroyo willow riparian forest habitat type (Holland 1986), although Holland does not recognize this type north of Monterey County, and the *Salix lasiolepis* Alliance and Association (Sawyer et al 2009, CDFW 2022c). Tree-sized arroyo willow dominates this riparian forest habitat type. The arborescent to arboreal canopy is typically dense and often impenetrable, although openings of various sizes occur locally. The native woody vine Pacific blackberry is abundant and often very dense in the understory. Few other understory species occur except in relatively open areas. Dense thickets of poison oak are localized in openings.

Arroyo willow riparian forest provides similar habitat characteristics for wildlife to those of mixed riparian forest, described above.

PALUSTRINE EMERGENT WETLAND

Wetlands are those areas that transition between aquatic and terrestrial systems, where surface water is at a depth and duration sufficient to promote the development of hydric soils and a preponderance of hydrophytic wetland vegetation. In the study area, emergent freshwater wetland types include ditch wetlands, seasonal wetlands, and freshwater marsh vegetation along the margins of lentic (still to slow-moving) water bodies. There are several functional types of emergent wetlands in the study area including ditch wetlands and freshwater marsh. These features are formally classified by the USFWS National Wetlands Inventory, and palustrine emergent freshwater wetlands may be inundated temporarily, seasonally or semi-permanently (National Wetlands Inventory mapping codes: PEMA, PEMC, PEMF) (USFWS 2022d).

Ditch wetlands are located in human-made ditches and swales immediately adjacent to either side of the existing railroad tracks, and may connect directly to larger natural drainages intersecting the study area. Within the study area, there is one ditch wetland lined with baserock/aggregate; this feature lacks evidence of hydric soil development but supports periodic to persistent standing water and hydrophytic vegetation.

Plant species composition along this ditch varies depending on standing water depth and duration, substrate, and proximity to seepage and other sources of hydrology. Observed plants include: hydrophytic grasses and forbs including watercress (*Nasturtium officinale; OBL*), rabbitfoot grass (*Polypogon monspeliensis;* FACW), Mexican rush (*Juncus mexicanus; FACW*), flatsedge (*Cyperus eragrostis;* FACW), duckweed (*Lemna* sp.; OBL), and small-fruited bulrush (*Scripus microcarpus;* OBL). The ditch wetland is immediately adjacent to a steep, mudstone escarpment that percolates groundwater out of horizontal cracks just above the toeslope. The persistent seepage into the ditch results in late-season wet conditions which support a higher percentage of perennial, obligate wetland plants (including rushes, watercress, duckweed) than are observed elsewhere in ditches adjacent to the rail line. Freshwater marsh habitat beyond the channelized ditches is limited primarily to areas with year-round standing water along the margins of natural and human-made ponded features, including Schwan Lagoon and landscaping features associated with a private garden along Woods Creek located north of the rail corridor and immediately west of the Santa Cruz Harbor. These areas are dominated entirely by perennial, emergent wetland vegetation including California bulrush (*Schoenoplectus californicus*), flat sedge (*Cyperus eragrostis*), and arroyo willow.

Wetlands along the trail alignment provide hydration points for birds and other wildlife species, as well as breeding and non-breeding habitat for amphibians, such as those listed in the riparian habitat description above. Algae, insect larva, and other invertebrates are important amphibian, avian, and bat food sources. Wetland emergent vegetation is an essential habitat feature for wildlife, providing structure for perches, roosts, and nests; cover and shelter from predators; and insulation for the wetland environment from both heat and cold.

PALUSTRINE SCRUB-SHRUB (ARROYO WILLOW-HIMALAYAN BLACKBERRY) WETLAND

This habitat type corresponds to the *Salix lasiolepis* Alliance and *Salix lasiolepis-Rubus* spp. Association (Sawyer et al. 2009, CDFW 2022c), and to a phase of the Central Coast riparian scrub (Holland 1986). Palustrine emergent scrub-shrub wetlands consist of areas dominated almost entirely by dense thickets of arroyo willow, with a patchy understory of annual grasses, herbs and Himalayan blackberry.

In the study area, the largest arroyo willow-Himalayan blackberry scrub-shrub wetland is located within a temporary staging area north of the rail corridor and west of 7th Avenue, near the entrance to the upper harbor at the west terminus of Brommer Street. This feature is situated in a shallow swale that concentrates surface and subsurface runoff providing adequate wetland hydrology for the establishment of hydrophytes. Similar to its riparian counterpart, this wetland type supports small- to medium-sized tree or arborescent willows, but is not associated with an intermittent or perennial stream or waterbody.

This wetland type provides similar habitat characteristics for wildlife to those of the palustrine emergent wetland, described above.

AQUATIC/RIVERINE

Aquatic and riverine habitat is composed of natural and human-made open bodies of still or flowing water. Natural waterbodies include various perennial and intermittent drainages and streams crossing the study area, originating inland in the Santa Cruz Mountains, coastal foothills, and coastal terraces of Santa Cruz and terminating in the Pacific Ocean. Named streams crossing the Project corridor from west to east include San Lorenzo River, Pilkington Creek, Woods Creek, and Leona Creek. All of these stream courses and waterbodies have been manipulated to some extent, and flow is conveyed via constrained channels, tunnels, and culverts beneath roadways and the rail corridor.

The study area also includes a portion of the Santa Cruz Harbor which historically was a natural freshwater lagoon (Woods Lagoon), prior to conversion to a small craft harbor in the early 1960s. This feature is now a saltwater/brackish estuary supporting limited emergent vegetation with regular boat traffic. The northernmost forested and marshy portions of Schwan Lagoon and Twin Lakes State Beach are also included in the study area, but the open water portions are beyond the extent of the study area for this Project. These areas support a dense overstory of mature coast live oak, eucalyptus, Monterey pine, arroyo willow, and emergent wetland vegetation.

The aquatic features that intersect the Project corridor and their respective tributaries, lagoons, and estuaries are the foundation for the most naturalized habitats along the corridor, especially given the surrounding urbanization and development. Together with the riparian habitat and open spaces that border them, these features offer important habitat values to wildlife species, providing water, food sources, shade, and cover. Aquatic habitats in the area moderate the Mediterranean climate of the region, allowing wildlife to adjust to seasonal and climatic fluctuations. Aquatic habitats that intersect the Project corridor support sensitive fish species, pond turtle, and marine mammals.

COASTAL TERRACE PRAIRIE

Coastal terrace prairie is a unique herbaceous plant community corresponding to the *Stipa pulchra* Herbaceous Alliance of Sawyer et al (2009) and to a phase of the coastal terrace prairie community type described by Holland (1986). Intact coastal prairie is typically dominated by native perennial grasses with widely-scattered annual and perennial forbs. Due to past anthropogenic disturbance (i.e., influenced by human beings), including cultivation and domestic livestock grazing that began with Spanish colonization in the late 1700s, the majority of remaining native coastal terrace prairie vegetation has largely been displaced by non-native annual grasses and forbs of Eurasian origin. Presently, much of California's historic coastal prairies have been lost to development and agriculture. Remaining coastal prairie habitat is typically located in proximity to the coast, in areas with annual rainfall exceeding 30 inches and cooler summer temperatures due to the influence of persistent fog. This habitat type is dependent on periodic disturbance that includes grazing, mowing, and/or fire that prevent natural succession to woody shrub and tree dominated plant communities. It should be noted, however, that the type and extent of disturbance may be either beneficial or detrimental to coastal terrace prairie structure and function.

The coastal terrace prairie habitat type within the study area is limited entirely to the northwesternmost grasslands of Twin Lakes State Beach and intergrades with non-native grassland and coast live oak forest. Coastal terrace prairie is composed of patchily-distributed native bunchgrasses, including purple needlegrass (*Stipa pulchra*) and California brome (*Bromus sitchensis* ssp. *carinatus*). Native forbs are limited almost entirely to coast tarweed (*Madia sativa*). As is typical with coastal prairie habitats, a substantial proportion of vegetation is composed of non-native annual grasses and forbs commonly found in areas described as non-native grassland including wild oats,

brome grasses, English plantain (*Plantago lanceolata*), smooth hawksbeard (*Crepis capilaris*) and sow thistle (*Sonchus oleraceus*). The non-native grassland habitat type is described in detail below. Native coastal terrace prairie indicator species have high rates of endemism (i.e., limited to a specific geographic location), and many are considered rare or having limited distribution within California.

A number of common bird species utilize the pockets of coastal terrace prairie near the rail corridor to forage for invertebrates and/or seeds, including: mourning dove *(Zenaida macroura)*, American crow *(Corvus brachyrhynchos)*, song sparrow (*Melospiza melodia)*, savannah sparrow (*Passerculus sandwichensis*), American robin (*Turdus migratorius*), lesser goldfinch (*Spinus psaltria*), and American goldfinch (*Spinus tristis*) (**Appendix E.5**). Swallow species forage on insects over the grasslands. Small mammals, such as Botta's pocket gopher (*Thomomys bottae*), ground squirrel, and California meadow vole (*Microtis californicus*) commonly occur in prairie and grassland habitats, along with lizards such as coast range fence lizard. These species in turn provide prey for garter snake (*Thamnophis* sp.), gopher snake (*Pituophis catenifer catenifer*), raptors (hawks and owls), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Killdeer *(Charadrius vociferous)*, mourning dove, western meadowlark *(Sturnella neglecta)*, and song sparrow may utilize grasslands for nesting.

NON-NATIVE GRASSLAND

The non-native grassland habitat type corresponds to the *Bromus* Herbaceous Alliance (Sawyer et al 2009, CDFW 2022c) and to a phase of the non-native grassland type of Holland (1986). In the study area, the most common association of this grassland type is *Bromus-Avena* with a lesser component of the *Bromus-Mixed herbs* (CDFW 2022c). Non-native grassland commonly occurs on tracts formerly supporting horticulture (flower nurseries) or past and/or planned urban development. Due to repeated disturbance and soil manipulation, the native seed bank is largely or entirely displaced. As a result, grassland habitat in the study area is composed primarily of weedy, non-native annual grasses and forbs, including: ripgut brome (*Bromus diandrus*) soft chess (*Bromus hordeaceus*), wild oats (*Avena barbata*, *A. fatua*), foxtail barley (*Hordeum murinum* ssp. *leporinum*), Italian ryegrass (*Festuca perennis*), six-weeks fescue (*Festuca myuros*), wild radish (*Raphanus sativus*), sheep sorrel (*Rumex acetosella*), and rough cat's ear (*Hypochaeris radicata*). In general, a large percentage of plant species identified in this habitat type are listed as invasive weeds with "moderate to high" potential for substantial to severe ecological impacts by the California Invasive Plant Council (Cal-IPC 2022).

Non-native grassland near the rail corridor can be expected to support similar wildlife to coastal terrace prairie described above.

NON-NATIVE FOREST

Non-native forest is composed of planted and volunteer conifers, ornamental trees, and blue gum eucalyptus. This habitat type supports small, monospecific and mixed stands of Monterey pine (*Pinus radiata),* Monterey Cypress (*Cupressus macrocarpa*), blue gum eucalyptus (*Eucalyptus globulus*), and silver wattle acacia (*Acacia dealbata*). In their native range, both Monterey Pine and Monterey cypress are CRPR List 1B.2 special-status species. The Swanton/Año Nuevo region, which is approximately 15 miles northwest of the study area, is the nearest native stand of Monterey pine. Native Monterey cypress are restricted entirely to the Monterey Peninsula and Del Monte Forest, located approximately 40 miles south of the study area. Outside their native range, both species are considered invasive by Cal-IPC (2022). Blue gum eucalyptus trees are able to rapidly grow from seed or can re-sprout following disturbance (e.g., cutting, fire) to an existing tree. Understory vegetation is often sparse due to leaf litter accumulation and possible allelopathic effects of oils found in eucalyptus leaf and root exudates (i.e., eucalyptus produces chemicals that could inhibit

germination and growth of other plants). Blue gum eucalyptus trees are an exotic species rated as "moderately invasive" by Cal-IPC (2022).

Groves of blue gum eucalyptus and Monterey Cypress within the study area have potential to support overwintering (roosting) monarch butterflies, a federal ESA candidate species recently added to the Red List of Threatened Species as endangered IUCN (2022). These groves supporting roosting monarchs are considered sensitive habitat despite being dominated by invasive, non-native species.

Non-native trees in the study area also provide roosting and nesting habitat for a number of common bird species listed in **Appendix E.5**, as well as habitat for San Francisco dusky-footed woodrat and squirrels.

SANDY BEACH/MUDSTONE

Sandy beaches are unvegetated landforms abutting the Pacific Ocean. This habitat type is composed of fine to moderate grained particulates formed from weathered decomposed rock (e.g., granite), pebbles, and shells. Beaches typically form in areas along the coast where waves and currents deposit and rework sediments. Santa Cruz Main Beach extending to the lower west embankments of the San Lorenzo River below the trestle (during periods of low-flow) and near the Wharf are the only sandy beaches within the study area.

Santa Cruz mudstone is prevalent in coastal Santa Cruz County and was created during the late Miocene through settling of fine-grained silt, clay, and silicate remnants of prehistoric diatoms. The thick, cemented sedimentary rock was formed through lithification of particulate diatomaceous matter. Tectonic stresses cause folding and faulting, giving mudstone the characteristic striation and ridges observed on many near-shore formations and outcrops (Phillips 1983). Along the coast, the mudstone formation is exposed at or very near the surface and contributes to the unique assemblage of vegetation communities and habitat types observed in the study area. Within the biological study area, mudstone cliffs rise from the eastern embankment of the San Lorenzo River beneath the existing trestle. These cliffs are largely unvegetated but have several large blue gum eucalyptus trees rooted on the uppermost portion near the rail corridor, as well as patchy planted and escaped ornamental vegetation.

Gulls and shore birds utilize the beaches for foraging and roosting. Cliff-nesting birds, such as peregrine falcon, white-throated swift, and swallow species utilize the mudstone cliffs for nesting. A pair of peregrine falcons utilizes the mudstone cliffs of the San Lorenzo River south of the SLR Trestle Bridge for nesting.

Cormorants (*Phalacrocorax* spp.), western gull (*Larus occidentalis*), and pigeon guillemot (*Cepphus columba*) may also nest or roost on the mudstone cliffs.

ORNAMENTAL/LANDSCAPED

Active and formerly landscaped areas dominated by planted ornamental and non-native vegetation are common along the rail corridor, surrounding residences, businesses, and public facilities and infrastructure. Common ornamental plants include: oleander (*Nerium oleander*), pride of Madeira (*Echium candicans*), Mexican bush sage (*Salvia luecantha*), glossy privet (*Ligustrum lucidum*), Jupiter's beard (*Centranthus ruber*), bamboo (*Phyllostachys aurea*), Ngaio tree (*Myoporum laetum*), and wooly cotoneaster (Cotoneaster *pannosus*). Landscaped areas dominated by ornamental vegetation are predominately associated with developed areas.

Ornamental/landscaped habitats along the Project corridor provide habitat for opportunistic wildlife species, including coast range fence lizard, common bird species (**Appendix E.5**), pocket gopher, brush rabbits, western gray squirrel (*Sciurus griseus*), opossums (*Didelphis virginiana*), and skunks that use power poles and lines, buildings, landscaping, and gardens.

DEVELOPED

Developed areas include the rail corridor (railbed and tracks), active roads, maintained trails, public facilities and utilities, businesses, private residences, parking areas, and other areas with anthropogenic influences (i.e., human activity) that do not support naturalized vegetation. Developed areas are extensive in the study area.

Developed habitats along the Project corridor provide habitat for similar opportunistic wildlife species to those listed above under ornamental/landscaped.

RUDERAL

Ruderal areas are not described by Holland (1986), Sawyer et al. (2009), or the CDFW (2022c). Ruderal habitat consists of highly disturbed, weedy areas immediately adjacent to existing urban infrastructure or along dirt roads. Ruderal vegetation consists of aggressive, colonizing species such as cheeseweed (*Malva parviflora*), fennel (*Foeniculum vulgare*), bur clover (*Medicago polymorpha*), black mustard (*Brassica nigra*), wild radish, and wild oats. In many instances, ruderal habitat is in a relatively stable seral state due to repeated, ongoing disturbance and is not likely to develop into more ecologically valuable habitat types. Ruderal habitat is primarily located along active roads and trails, and close to developed areas.

Wildlife species accustomed to disturbed environments, such as those listed under the ornamental/ landscaped and developed habitat type above, are likely to occur in ruderal environments.

Sensitive Habitats

Sensitive habitats are generally considered by federal, state, or local agencies as those habitats that support special-status plants and wildlife; provide important habitat values for wildlife; represent areas of unusual, limited distribution, or regionally restricted habitat types; show a decrease in acreage globally and/or statewide; and/or support high biological diversity.

Habitat types considered sensitive include: those listed as Environmentally Sensitive Habitat Areas (hereinafter Coastal Act ESHA) in the California Coastal Zone in regional Local Coastal Programs (LCP) or by the California Coastal Act (1976) and in municipal ordinances and management plans; habitats with state and global rarity rank S1-S3 and/or G1-G3, described as Sensitive Natural Communities by California Department of Fish and Wildlife (CDFW 2022c); wetlands and other waters subject to Section 401 and 404 of the Clean Water Act (1977); and waters of the state subject to the Porter-Cologne Water Quality Control Act (California State Water Resource Control Board [CSWRCB] 2022).

Special-status species include: those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS or National Oceanic and Atmospheric Administration (NOAA) Fisheries under the federal Endangered Species Act (ESA); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California

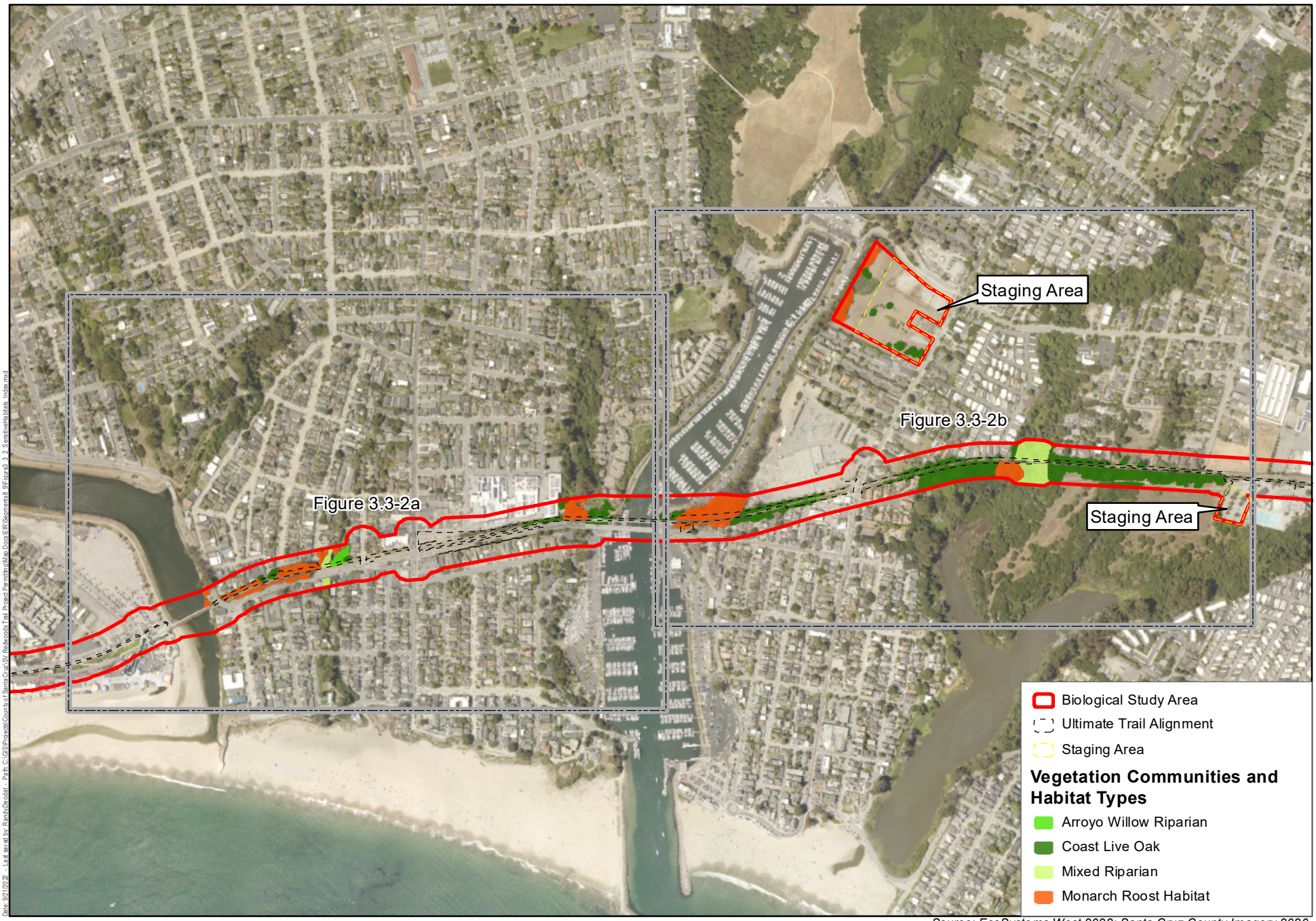
Endangered Species Act (CESA); animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; plants with a California Rare Plant Rank of 1 or 2; and/or other species that meet the criteria for rarity.

Figures 3.3-2 and **3.3-2a** through **3.3-2b** depict the extent of sensitive habitats, and **Figures 3.3-3** and **3.3-3a** through **3.3-3b** depict aquatic habitats including wetlands and "other waters" in the study area. **Table 3.3-3** details regulatory authority over these sensitive habitats, focusing on areas that may incur direct and indirect impacts from Project implementation. Descriptions of common and sensitive wildlife species that may utilize the sensitive habitats listed below are provided in the *Floristic Inventory and Habitat Characterization* section above.

Table 3.3-3 Sensitive Habitats and Regulatory Authority Considered Under CEQA

Habitat Type	CEQA	CCC ESHA	County of Santa Cruz Sensitive Habitat	CDFW Sensitive Natural Community	City of Santa Cruz Sensitive Habitat Area	City of Santa Cruz Citywide Creeks and Wetlands	Clean Water Act Section 401 and 404	Porter-Cologne Water Quality Act
Arroyo willow and mixed riparian forest	X	x	x	x	X	X	x	x
Coast live oak forest	X	x	x					
Palustrine emergent and scrub-shrub wetland	X	x	x	x	X	X	x	x
Aquatic/Riverine	x	x	x		X	X	x	x
Western Monarch Roost Sites	x	x	x		X			
Special-status plants and wildlife	x	x	x					

CEQA = California Environmental Quality Act; CCC = California Coastal Commission; CDFW = California Department of Fish and Wildlife; ESHA = Environmentally Sensitive Habitat Areas



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

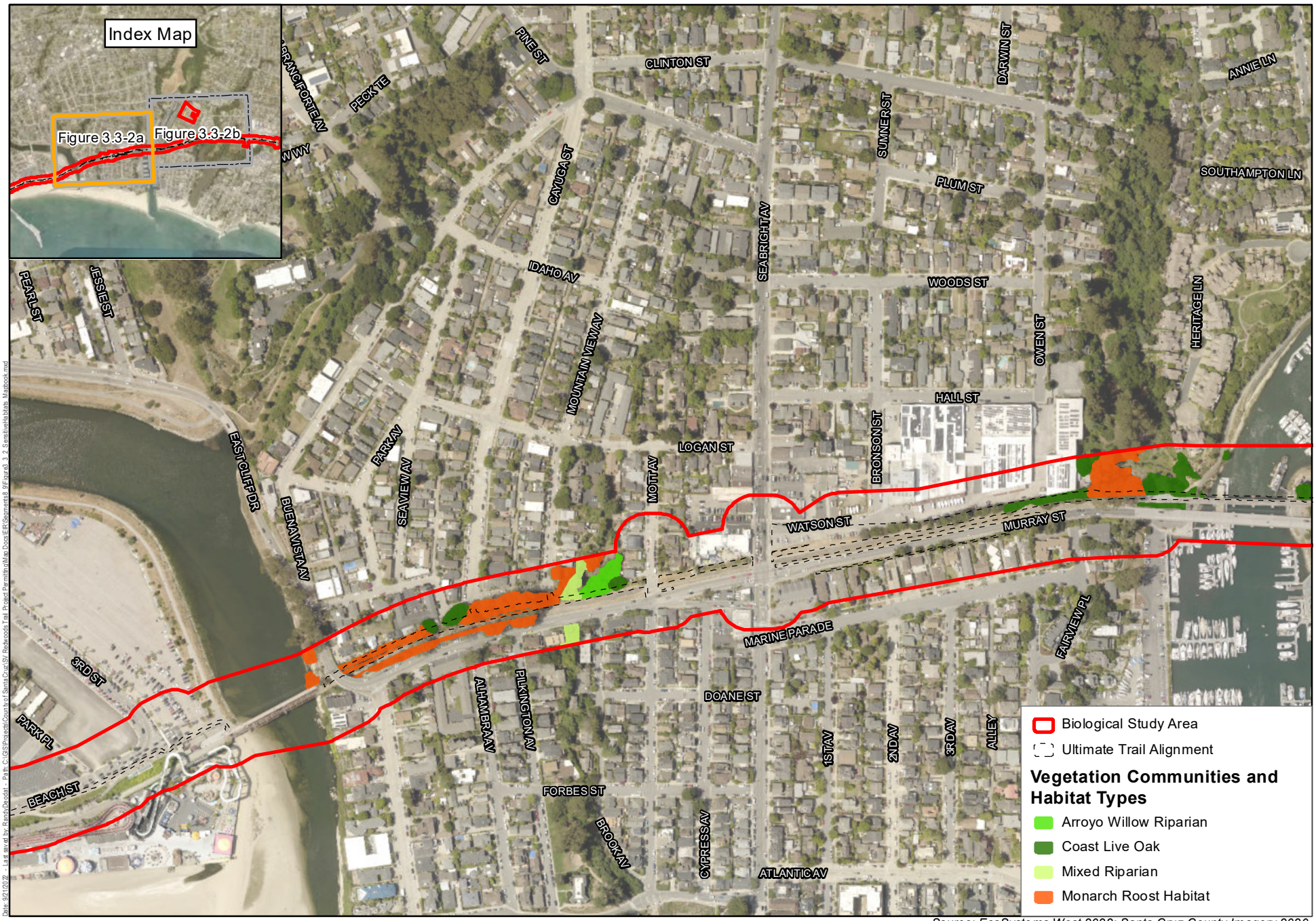
0 400 800

Feet

Figure 3.3-2

Sensitive Habitat - Index

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

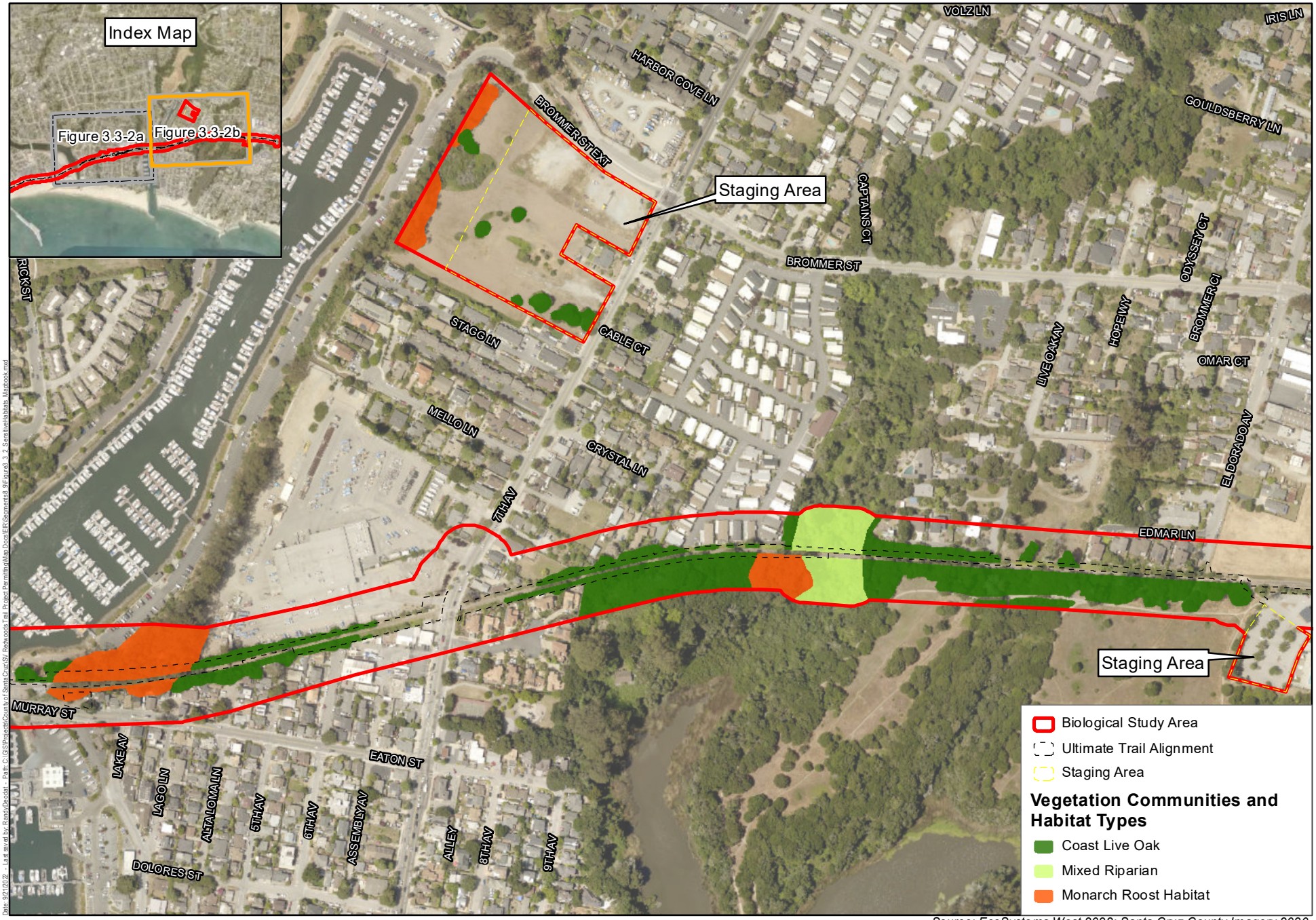
0 200 400

Feet

Figure 3.3-2a

Sensitive Habitat

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

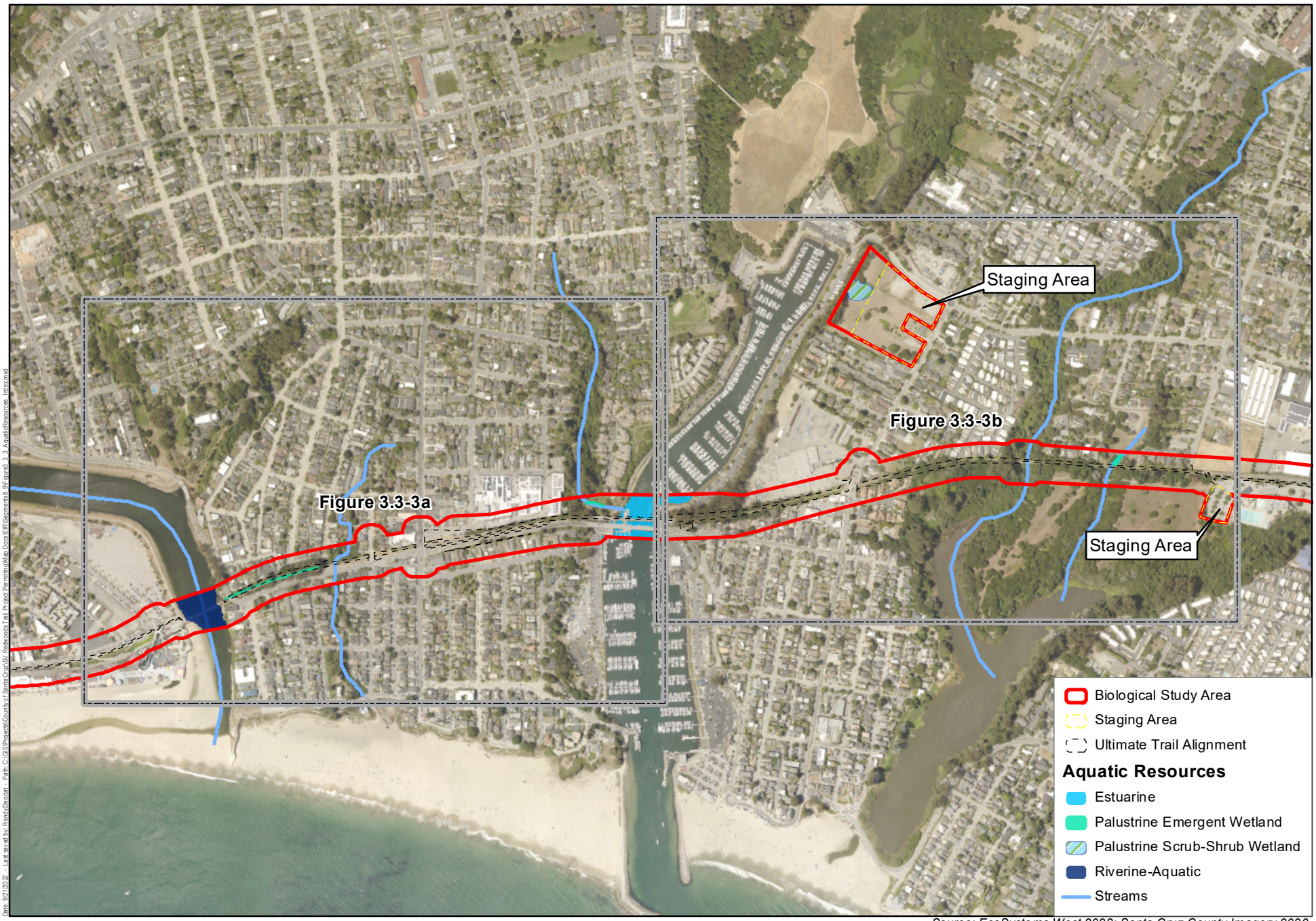
0 200 400

Feet

Figure 3.3-2b

Sensitive Habitat

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

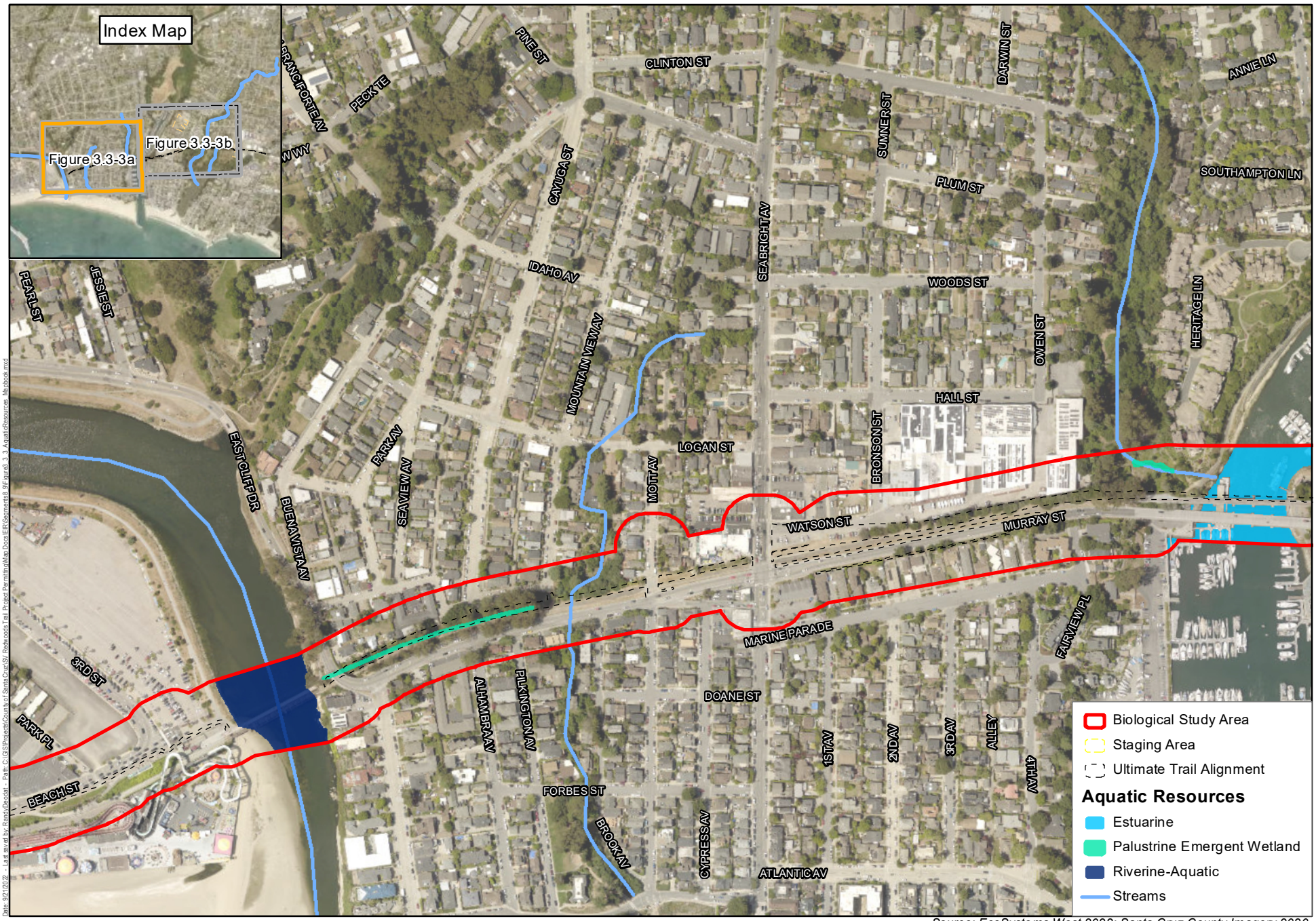
0 400 800

Feet

Figure 3.3-3

Aquatic Resources - Index

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

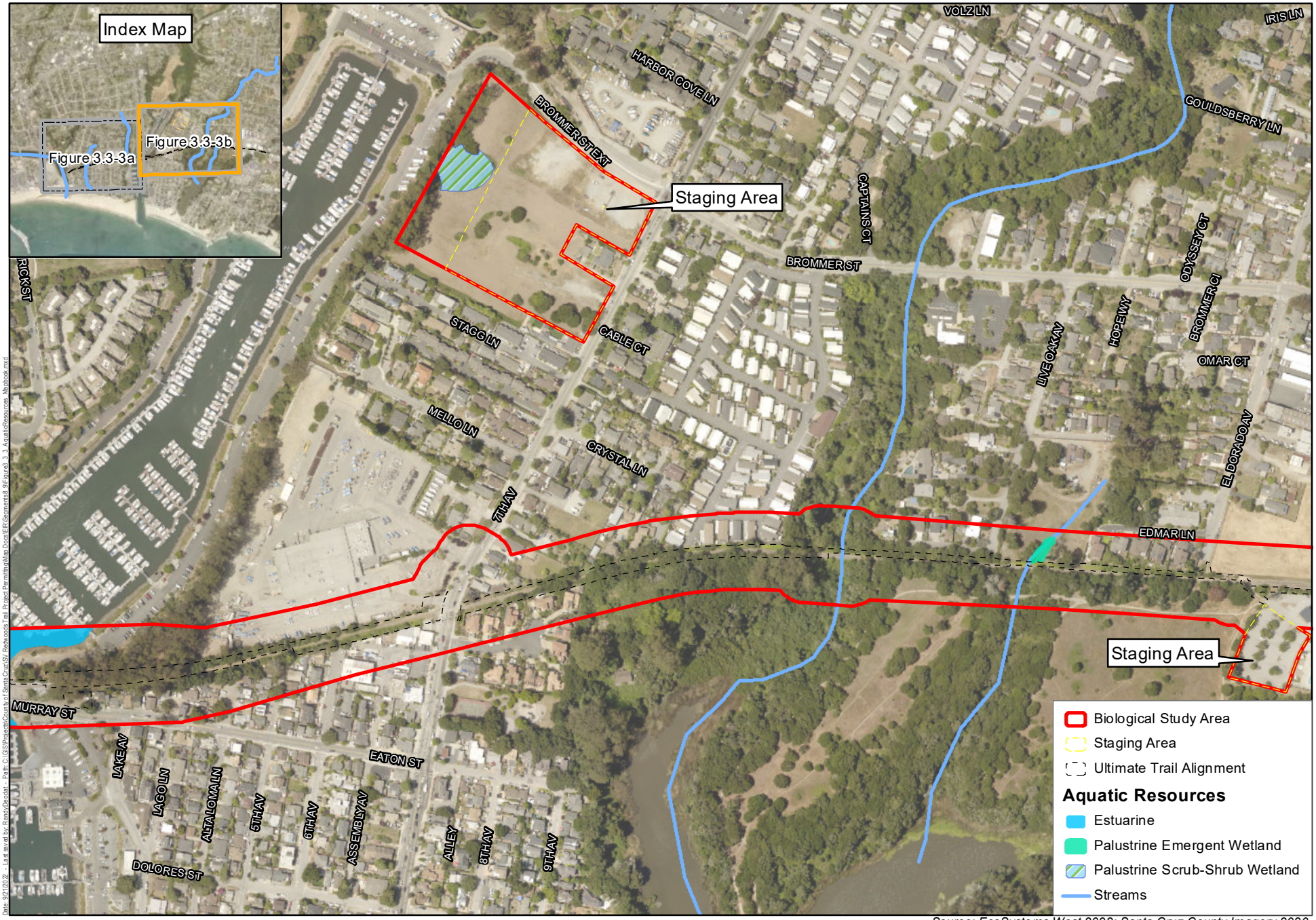
0 200 400

Feet

Figure 3.3-3a

Aquatic Resources

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

0 200 400

Feet

Figure 3.3-3b

Aquatic Resources

Coastal Rail Trail Segments 8 and 9

ARROYO WILLOW AND MIXED RIPARIAN FOREST

Arroyo willow riparian forest is considered Coastal Act ESHA and sensitive habitat type by the County of Santa Cruz LCP, County Sensitive Habitat Ordinance, and County Riparian Corridor and Wetlands Protection Ordinance (Santa Cruz County Code 16.32). The City of Santa Cruz City-Wide Creeks and Wetlands Management Plan (2006) regulates development within designated widths from the centerline of creeks, rivers, and other aquatic features which typically includes the associated riparian corridor. The *Salix lasiolepis* Alliance is also described as a sensitive natural community by CDFW (2022c). These areas are also regulated as wetland habitats, often one or two-parameter features lacking hydric soils, by the California Coastal Commission. Riparian communities are considered sensitive habitat due to their value to wildlife, limited distribution, and decreasing acreages statewide. Riparian vegetation is valued for wildlife habitat, flood protection, stream bank stabilization, erosion control, and water quality related to nutrient and sediment filtration by riparian vegetation.

Arroyo willow and mixed riparian habitat primarily occurs along narrow stream corridors, arroyos, and Schwan Lagoon, and provides habitat and movement corridors for a variety of common and special-status wildlife species. This habitat's rich ecological values for wildlife are described in the *Floristic Inventory and Habitat Characterization* section above.

PALUSTRINE EMERGENT AND SCRUB-SHRUB WETLAND

The majority of emergent wetland features within the study area are palustrine features including all nontidal wetlands dominated by trees, shrubs, and persistent emergent graminoids and forbs; and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. Palustrine emergent wetland habitat is considered a Coastal Act ESHA and sensitive habitat by the County of Santa Cruz LCP (Santa Cruz County 1994), Sensitive Habitat Ordinance (Santa Cruz County Code 16.32), and Riparian Corridor and Wetlands Protection Ordinance (Santa Cruz County Code 16.30). Moreover, these areas are subject to federal jurisdiction under the Clean Water Act and state regulation under the authority of the Porter-Cologne Water Quality Act (2022) and California Coastal Act (1972). In the Coastal Zone, only one positive wetland indicator (hydrology, hydric soils, or hydrophytic plants) is required to identify wetlands. As a result, the semi-permanently flooded wetland ditch, located immediately east of the San Lorenzo River Trestle, is identified as a wetland for purposes of analysis in this EIR, even though it lacks evidence of hydric soils. Additionally, riparian habitat is typically protected by development buffers outlined in the City of Santa Cruz Citywide Creeks and Wetlands Management Plan (2006).

Emergent wetlands support a unique array of specially adapted native and non-native hydrophytic trees, shrubs, grasses and forbs that provide habitat for a variety of animals. These are described in the *Floristic Inventory and Habitat Characterization* section above.

AQUATIC/RIVERINE

Natural aquatic and riverine habitats are considered Coastal Act ESHA and sensitive habitat by the County of Santa Cruz LCP, Sensitive Habitat Ordinance, and Riparian Corridor and Wetlands Protection Ordinance, and City of Santa Cruz Citywide Creeks and Wetlands Management Plan. Aquatic and riverine habitats are also subject to federal jurisdiction under the Clean Water Act and state regulation under the authority of the Porter-Cologne Water Quality Act, California Coastal Act, and Sections 1600–1616 of the CFGC [CFGC Code § 1600–1616 (CDFW 2004)].

Aquatic habitats include open waters such as lagoons, ponds, and estuaries (harbor). Riverine features include a series of named and unnamed creeks crossing the study area. Riverine habitats also include all wetlands (e.g., gravel or sandbars, wetland embankments) and deep-water habitats (e.g., riffle pools) contained in natural or artificial channels that have periodically or continuously flowing water. Substrates generally consist of mud, rock, cobble, gravel or sand.

As described in the *Floristic Inventory and Habitat Characterization* section above, aquatic and riverine habitats occupy a critical role in urbanized Santa Cruz County, providing hydration for wildlife species and supporting special-status fish, western pond turtle (*Emys marmorata*), and marine mammals.

COAST LIVE OAK WOODLAND AND FOREST

Coast live oak woodland and forest is listed as a sensitive habitat type by the County of Santa Cruz Sensitive Habitat Ordinance (Santa Cruz County Code 16.32). Coast live oak dominated habitats within the study area are considered Coastal Act ESHA because it meets the requirements for 'especially valuable habitat' (EVH), based on the "special role" of this habitat to support a diversity of wildlife species, including the sensitive San Francisco dusky-footed woodrat, a CDFW Species of Special Concern (Bolster 1998, CDFW 2018d), and to represent a locally restricted habitat type within Santa Cruz urban forest and the mosaic of habitat types comprising the study area. This habitat type is not a CDFW sensitive natural community. Along the Project corridor, patchy coast live oak woodland and forest is situated along segments of the rail corridor and intergrades with adjacent coastal terrace prairie and non-native grassland habitats in Twin Lakes State Beach.

Although fragmented, these forests support large mature coast live oak trees and are positioned immediately adjacent to riverine, riparian, and scrub habitats, thus representing a locally important function in the assemblage of ecotones or edge habitats[10]. These larger trees also provide habitat features for foliage-roosting and cavity-roosting bats and other species, as described in the *Floristic Inventory and Habitat Characterization* section above. These habitats support the San Francisco dusky-footed woodrat, a CDFW Species of Special Concern (Bolster 1998, CDFW 2018d).

MONARCH BUTTERFLY ROOST SITES (EUCALYPTUS AND MONTEREY CYPRESS GROVES)

The monarch butterfly utilizes eucalyptus, Monterey pine, and Monterey cypress trees for autumnal and winter roost sites, typically within 1.5 miles (2.4 kilometers) of the Pacific Ocean. The groves are predominantly composed of non-native plant species, many of which are classified as invasive by Cal-IPC and the USDA. However, the monarch butterfly is an imperiled species, is a candidate for listing under the federal Endangered Species Act (USFWS 2020 and USFWS 2022e) and was classified as endangered by the International Union for Conservation of Nature (IUCN) in July 2022. Winter roost sites of the monarch butterfly are listed by NatureServe as imperiled/vulnerable (S2/S3) within California (CDFW CNDDB 2022). In the 1994 General Plan, the County of Santa Cruz recognizes as sensitive habitat "areas which provide habitat for species which meet the definition of Section 15380 of the CEQA guidelines." Monarch butterflies meet this criterion. In the City of Santa Cruz General Plan the monarch butterfly is identified as a special-status species in Natural Resources and Conservation 2.4.1 and in Table 1, which lists avoidance and minimization measures (City of Santa

[10] Edge habitats occur when two or more habitat types abut one another. Edge habitats provide an abundance and variety of food sources because they have diverse plant species and microhabitat variability, including cover, shelter, and shade, as well as sun exposure for warmth and air flow for circulation.

Cruz 2012). The City of Santa Cruz also identifies the overwintering habitat of the monarch as a sensitive habitat area (Santa Cruz City 2012).

Winter roost sites are sufficiently heterogeneous to permit shifts of roost location in accord with prevailing weather conditions and seasonal variation in insulation. The roost site consists of the trees upon which the butterflies cluster, as well as the surrounding trees that provide wind protection. Monarchs form aggregations in the foliage on the underside of peripheral branches. In addition, overwintering habitat includes nearby nectar plants and water sources surrounding the roost site, although monarchs may fly some distance to obtain these resources (Pelton et al. 2016, Griffiths and Villablanca 2015).

Known and potential roost sites within the study area include eucalyptus and Monterey cypress trees bordering the rail corridor in the following areas: immediately east of the San Lorenzo River between the San Lorenzo River Trestle and Pilkington Creek; along Woods Creek (west of the Santa Cruz Harbor) on the north side of the rail corridor; immediately east of the Santa Cruz Harbor extending north of the corridor; and within the Twin Lakes State Beach open space, west of Simpkins Swim Center.

Special-Status Plant Species

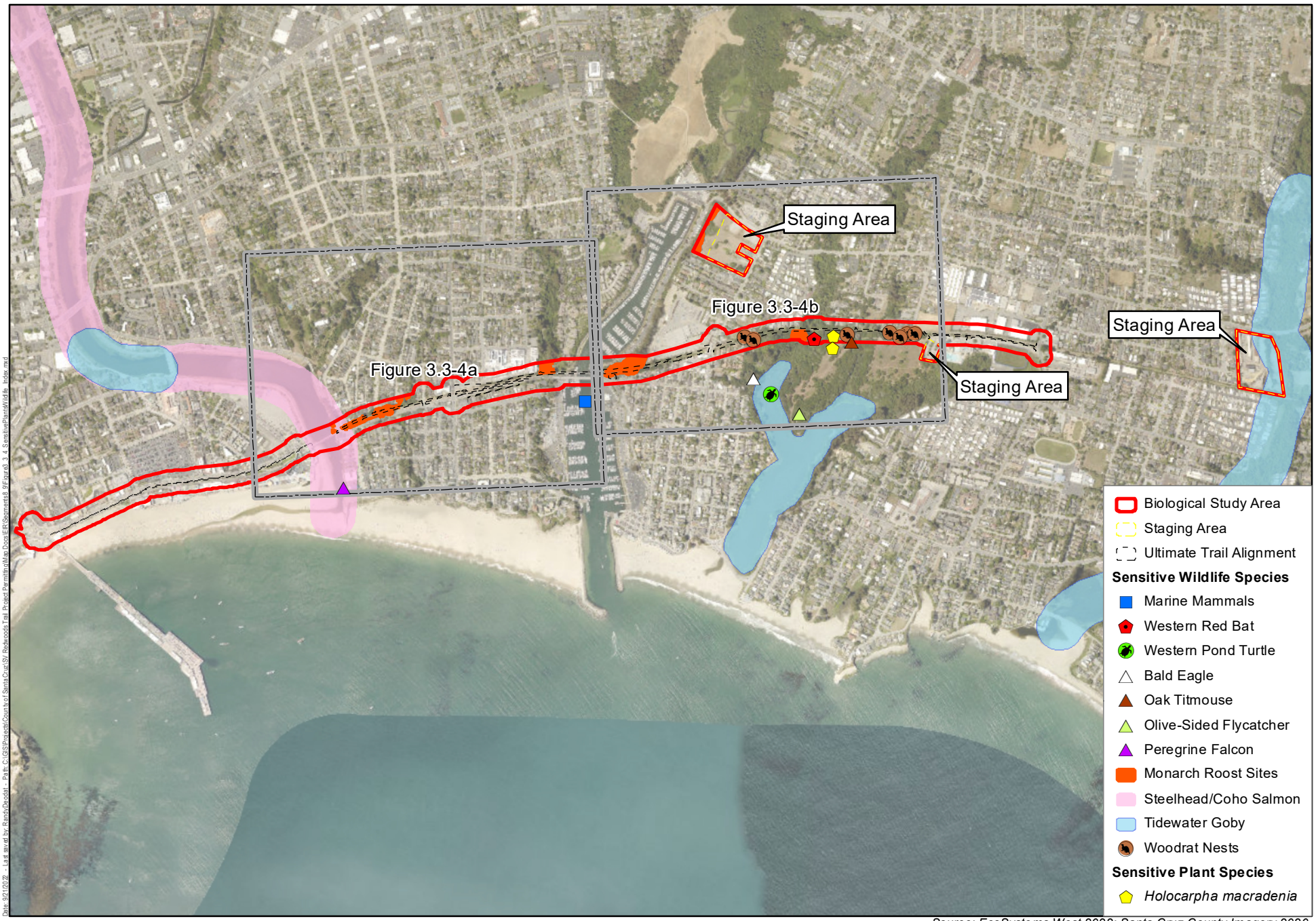
The following sensitive plant species is known to occur within the study area. Details on occurrence information and a life history species narrative for this species are provided in **Appendix E.1** and **Appendix E.4**.

SANTA CRUZ TARPLANT

The Santa Cruz tarplant (*Holocarpha macradenia*) is listed as Endangered under CESA (CDFW 2022a) and Threatened under the FESA (USFWS 2000). This species also a CRPR List 1B.1 species and has a NatureServe Rarity Rank of S1. In the vicinity of the study area, the Santa Cruz tarplant is known to occur in the disturbed coastal prairie and non-native grassland at Twin Lakes Beach State and Arana Gulch. The population at Twin Lakes State Beach is not within the rail corridor but is present immediately south in the study area (**Figure 3.3-4b**). This population fluctuates interannually depending on seasonal precipitation, temperature, competition from exotic annual plants, and disturbance. In June 2022, a total of 36 small-statured plants (< 6 inches) were observed in two distinct occurrences within Twin Lakes State Beach south of the rail corridor. The majority of these plants were single stemmed with fewer than four flowering heads.

Special-Status Wildlife Species

The following sensitive wildlife species are known or have potential to occur within or near the study area and are depicted in **Figures 3.3-4** and **3.3-4a** and **3.3-4b**. Details on occurrence information and life history species narratives for these species are provided in **Appendix E.1** and **Appendix E.4.**



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

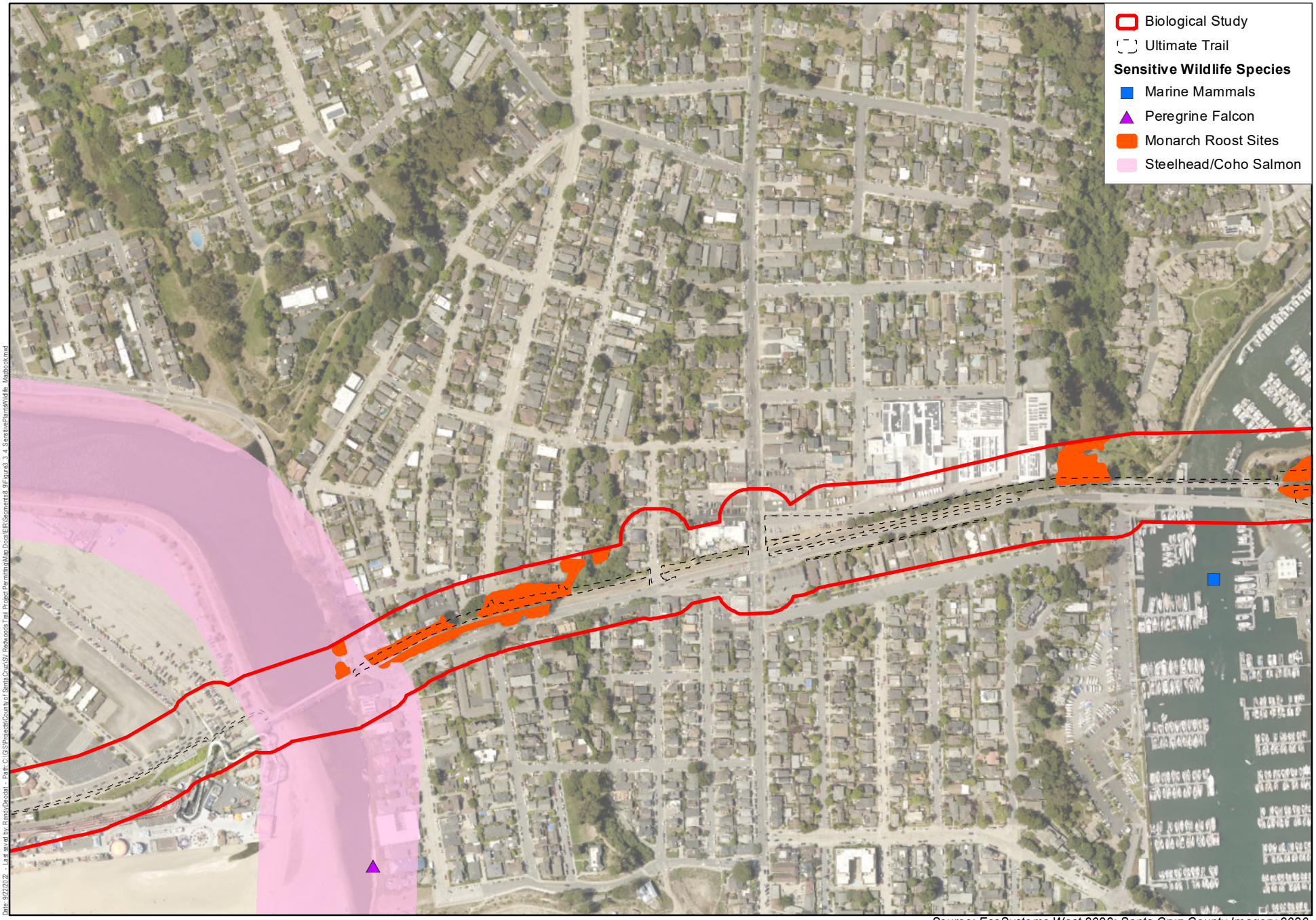
0 600 1,200

Feet

Figure 3.3-4

Sensitive Plants and Wildlife Species - Index

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

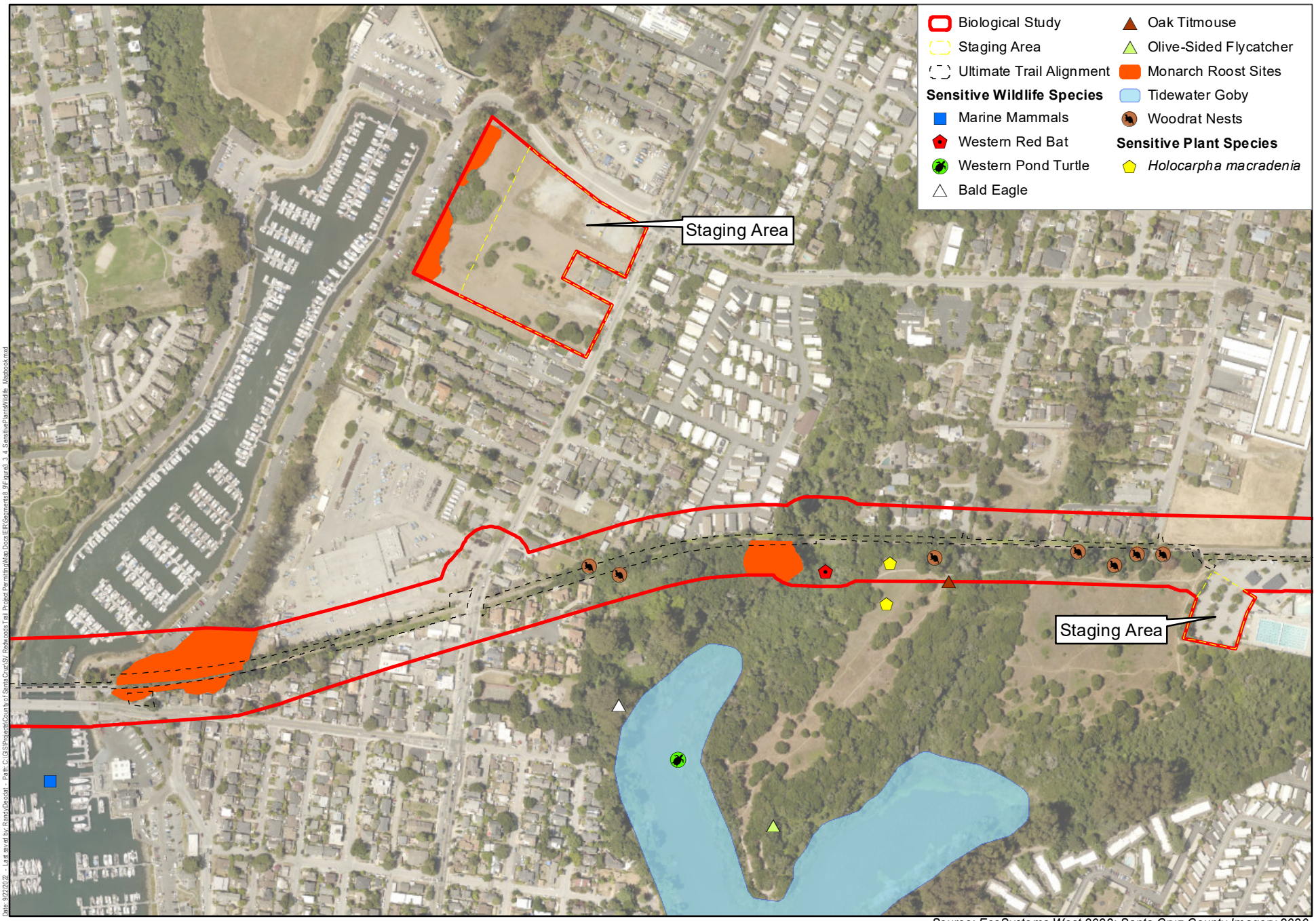
0 200 400

Feet

Figure 3.3-4a

Sensitive Plants and Wildlife Species

Coastal Rail Trail Segments 8 and 9



Source: EcoSystems West 2022; Santa Cruz County Imagery 2020.

Harris & Associates

N

0 200 400

Feet

Figure 3.3-4b

Sensitive Plants and Wildlife Species

Coastal Rail Trail Segments 8 and 9

MONARCH BUTTERFLY

The monarch butterfly (*Danaus plexippus plexippus*) is a candidate for listing under the FESA (USFWS 2020 and 2022). On July 21, 2022, the IUCN listed the monarch as Endangered. Winter roost sites of the monarch butterfly are listed by NatureServe as imperiled/vulnerable (S2/S3) within California (CDFW CNDDB 2022). In the 1994 General Plan, the County of Santa Cruz recognizes as sensitive habitat "areas which provide habitat for species which meet the definition of Section 15380 of the CEQA guidelines." Monarch butterflies meet this criterion. In the City of Santa Cruz General Plan, the monarch butterfly is identified as a special-status species in Natural Resources and Conservation 2.4.1 and in Table 1, which lists avoidance and minimization measures (City of Santa Cruz 2012). The City of Santa Cruz also identifies the overwintering habitat of the monarch as a sensitive habitat area (Santa Cruz City 2012).

The monarch is known to occur north of the rail corridor at Woods Creek (west of the Santa Cruz Harbor) (McGinty and Davilla 2022), within the Twin Lakes State Beach open space (Lifeguard Headquarters) (Xerces Site 3011), and near South Branciforte Avenue at Buena Vista Avenue (Xerces Site 3005) (Xerces Society 2022a and 2022b) (**Figures 3.3-4a** through **3.3-4b).**

Additionally, potential roosting habitat is present in three locations including: the eucalyptus trees along the rail corridor east of the San Lorenzo River to Pilkington Creek; on the east side of the Santa Cruz Harbor extending north of the corridor; and in a grove of eucalyptus trees at Leona Creek on the south side of the tracks in the Twin Lakes State Beach open space. Eucalyptus and Monterey cypress groves that are occupied as autumnal and overwintering roost habitat are described under *Sensitive Habitats* above.

TIDEWATER GOBY

The tidewater goby (*Eucyclogobius newberryi*) is listed as Endangered under the FESA (USFWS 1994) and a Species of Special Concern by CDFW (CDFW 2022d, Moyle et al. 2015). The Project corridor is immediately adjacent to the San Lorenzo River, where occurrence of tidewater goby is considered "intermittent" (USFWS 2005). The San Lorenzo River is not considered critical habitat. The tidewater goby has been observed in Schwan Lagoon within the Twin Lakes State Beach open space (CDFW 2022f). The tidewater goby is not expected to occur within the Santa Cruz Harbor, despite a historical erroneous occurrence record that was corrected in 2020 (CDFW 2022f).[11]

COHO SALMON

The central California coast coho salmon (*Oncorhynchus kisutch*) is listed as Endangered under the FESA and CESA (NOAA Fisheries 2012, CDFW 2022f). The San Lorenzo River and the adjacent riparian habitat are within designated critical habitat for the species (NOAA Fisheries 1999 and 2012). The Evolutionarily Significant Unit (ESU) includes all naturally spawned coho salmon originating from rivers south of Punta Gorda, California to and including Aptos Creek, salmon originating from tributaries to San Francisco Bay, and salmon from artificial propagation programs[12]. Coho salmon ESU includes all

[11] A survey of lower Arana Gulch for tidewater gobies was conducted in 2004 by Camm Swift, a recognized tidewater goby expert; no tidewater gobies were found (Entrix, 2004). No historical records of tidewater gobies are known from Arana Gulch, the Santa Cruz Harbor, or the antecedent Woods Lagoon (Entrix 2004). The erroneous 1984 Woods Lagoon occurrence record listed in the CNDDB was corrected in 2020 (CDFW 2022).

[12] Don Clausen Fish Hatchery Captive Broodstock Program, Scott Creek/King Fisher Flats Conservation Program, and Scott Creek Captive Broodstock Program.

passable Essential Fish Habitat (EFH)[13] defined as all water bodies currently or historically occupied by Pacific Fishery Management Council-managed coho salmon, including the hydrologic units within the Monterey Bay, up to and including the Pajaro hydrologic unit. Coho salmon EFH also includes estuarine and marine areas to 200 nautical miles offshore (NOAA Fisheries 2012).

STEELHEAD

The central California coast steelhead (*Oncorhynchus mykiss*) is listed as Threatened under the FESA (NOAA Fisheries 2006). The San Lorenzo River is considered critical habitat (NOAA Fisheries 2005), and this species is known to occur in the watershed.

PACIFIC LAMPREY

The Pacific lamprey is a CDFW Species of Special Concern (CDFW 2022d; Moyle et al. 2015). This species is known to occur in the San Lorenzo River watershed (Alley 2022).

WESTERN POND TURTLE

The western pond turtle (*Emys marmorata*) is a CDFW Species of Special Concern (CDFW 2022d, Thompson et al. 2016). The western pond turtle has been observed in Neary Lagoon 0.25 miles from the western terminus of the alignment and in Schwan Lake within the Twin Lakes State Beach open space (CDFW 2022f, g).

SANTA CRUZ BLACK SALAMANDER

The Santa Cruz black salamander is a CDFW Species of Special Concern (CDFW 2022d, Thompson et al. 2016). The Santa Cruz black salamander may occur along the drainages adjacent to the Project corridor. The Santa Cruz black salamander is known from Pogonip Park and UCSC quarry, both locations approximately 2.0 miles northwest of the western terminus of the alignment (CDFW 2022f, g).

VAUX'S SWIFT

The nesting Vaux's swift (*Chaetura vauxi*) is a CDFW Species of Special Concern (CDFW 2022d, Shuford and Gardali 2008) and a USFWS Bird of Conservation Concern (USFWS 2008). Breeding season records document the Vaux's Swift near the Project corridor along the San Lorenzo River, at Arana Gulch, and Twin Lakes State Beach open space, but occurrences are uncommon (eBird 2022). Oak woodland within the Twin Lakes State Beach open space provides potential nesting habitat. The Santa Cruz Bird Club documents nesting in chimneys on the west side of Santa Cruz (Suddjian 2013).

OLIVE-SIDED FLYCATCHER

The nesting olive-sided flycatcher (*Contopus cooperi*) is a CDFW Species of Special Concern (CDFW 2018d, Shuford and Gardali 2008) and a USFWS Bird of Conservation Concern (USFWS 2008). Woodlands and non-native forests adjacent to creeks and drainages provide potential nesting habitat for this species. Recent observations of this bird are from Woods Creek, the upper Santa Cruz Harbor, Arana Gulch, and the Twin Lakes State Beach open space near the Project corridor (eBird 2022). These locations provide suitable habitat, although nesting is rare.

[13] Essential Fish Habitat (EFH) is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (NOAA Fisheries 2012).

OAK TITMOUSE

The nesting oak titmouse (*Baeolophus inornatus*) is a USFWS Bird of Conservation Concern (USFWS 2008). The coast live oak woodland along the Project corridor provides potential nesting habitat for the oak titmouse. The species has been observed at Pilkington Creek, in the Seabright neighborhood, and in the Twin Lakes State Beach open space north and south of the railway alignment, including nesting along the rail corridor (eBird 2022).

NORTHERN HARRIER

The nesting northern harrier is a CDFW Species of Special Concern (CDFW 2018d, Shuford and Gardali 2008). This species has been observed at Neary Lagoon and occasional rare occurrences (including 2022) at the Twin Lakes State Beach open space (eBird 2022). One individual was observed at the open space during spring 2022 surveys. Neary Lagoon, Arana Gulch and Twin Lakes State Beach open space provide suitable foraging and nesting habitat, but nesting in these areas is rare.

WHITE-TAILED KITE

The white-tailed kite (*Elanus leucurus*) is listed by the CDFW as Fully Protected (CDFW 2022e). Tree stands, coastal scrub, and riparian habitats in and adjacent to the Project corridor provide potential nesting habitat for the white-tailed kite. Observations of this species along the alignment are uncommon, but have been documented at Neary Lagoon, Arana Gulch, and Twin Lake State Beach open space (eBird 2022).

PEREGRINE FALCON

The American peregrine falcon (*Falco peregrinus anatum*) is listed as Fully Projected by CDFW (CDFW 2022e). The mudstone cliffs along the San Lorenzo River provide nesting habitat for this species and a pair has been documented there during breeding season over consecutive years, demonstrating nest fidelity. eBird records document observations of the American peregrine falcon near the alignment at Tyrrell Park and within the Twin Lakes State Beach open space (eBird 2022).

BALD EAGLE

The bald eagle is listed as Endangered under the CESA and as Fully Protected by CDFW (CDFW 2022e). Adult eagle/s have been observed along the San Lorenzo River, at Tyrrell Park (2022) (eBird 2022), the Santa Cruz Harbor (2020) (eBird 2022), and Arana Gulch open space (2021) (eBird 2022). Adults and juveniles were observed within the Twin Lakes State Beach open space where eagles are known to nest (eBird 2022).

BATS

The western red bat (*Lasiurus blossevillii*) and the long-legged myotis (*Myotis Volans*) are listed as High Priority by the Western Bat Working Group (2017). The western bat is also a CDFW Species of Special Concern (Bolster 1998, CDFW 2018d). The western red was detected in the foliage of the riparian tree canopy at Twin Lakes State Beach open space during 2022 emergence/acoustic surveys. This species may occur in the willow riparian and coast live oak woodland habitats along the corridor. The long-legged myotis may occupy the habitat features present in the coast live oak woodland, particularly adjacent to Schwan Lagoon and its three tributaries.

The foliage-roosting hoary bat (*Lasiurus cinereus*) was also detected during the 2022 emergence/acoustic surveys. This bat is listed as medium priority by the Western Bat Working

Group (2017). Common bat species, such as California myotis, Yuma myotis and big brown bat, are also likely to occur in the oak and riparian habitats (Heady 2018). The CFGC protects non-listed bat species and their roosting habitat, including individual roosts and maternity colonies. These include CFGC Section 86; 2000; 2014; 3007; 4150, along with several sections under Title 14 of California Code of Regulations (CCR).

SAN FRANCISCO DUSKY-FOOTED WOODRAT

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is considered a CDFW Species of Special Concern (Bolster 1998, CDFW 2022d). The coast live oak woodland and forest, riparian, and non-native forest (in some locations) habitats in or adjacent to the Project corridor provide habitat for the woodrat. Ideal locations have proximity to water sources and are edge habitats, with a variety of woodrat food sources. A number of woodrat houses were documented in these habitats, both on the ground and arboreal (or in the trees). These incidental observations are illustrated on **Figure 3.3-4b.**

SOUTHERN SEA OTTER

The southern sea otter (*Enhydra lutris nereis*) is listed as Threatened under the FESA (USFWS 1977), as Fully Protected by CDFW and as a Marine Mammal Commission (MMC) Species of Special Concern (CDFW CNDDB 2022). The sea otter is known to occur intermittently in the Santa Cruz Harbor (McGinty 2022).

EASTERN PACIFIC HARBOR SEAL

The eastern Pacific harbor seal (*Phoca vitulina richardsi = richardii*) is protected under the Marine Mammal Protection Act. The harbor seal is residential within the Santa Cruz Harbor, foraging within the waters of the harbor and utilizing the docks as night time haul out locations. The harbor seal molts[14] annually within the harbor (mid-May to early July); during this molting period the harbor seal spends more time hauled out (i.e., on the docks and rocks) (McGinty 2022; Seal Conservancy 2017; Vanderhoof and Allen 2005; Lowry and Forney 2005). The closest harbor seal rookeries are located at Elkhorn Slough, Lover's Point State Marine Reserve, and Point Lobos (25–50 km or 15–31 miles southeast and south).

CALIFORNIA SEA LION

The California sea lion (*Zalophus californianus*) is protected under the Marine Mammal Protection Act. The sea lion is residential in the Monterey Bay and intermittent in the Santa Cruz Harbor (McGinty 2022). The sea lion uses the docks within the harbor as occasional haul outs and forages during fish runs of anchovies and sardines (when the fish are caught within the harbor by currents). Most of their breeding sites are in the southern California Channel Islands, where their pups are born every summer. California sea lion annual migration brings the males north to the Santa Cruz area each year.

Wildlife Movement

This section describes wildlife movement because substantial interference with the movement of wildlife species or with established migratory wildlife corridors is considered a significant impact under CEQA.

[14] Molt = shed fur and skin (pelage) in sheets.

Corridors for wildlife movement (also dispersal corridors, wildlife corridors, or landscape linkages) are features whose primary function is to connect at least two isolated habitat areas (Bond 2003). A basic description of the functions of corridors is as follows:

> "Corridors provide avenues along which (1) wide ranging animals can travel, migrate, and meet mates…(2) plants can propagate…(3) genetic interchange can occur…(4) populations can respond to environmental change…[and] (5) locally extirpated populations can be replaced from other areas." (Beier and Loe 1992)

Corridors provide for or facilitate the movement of wildlife and plants between two or more otherwise disjunct habitats (Lidicker 1999, Hilty et al. 2006). In the urban/open space interface, corridors can provide links between different types of habitat areas, including but not limited to core habitat areas, supportive natural landscapes or habitat patches, and linear habitats (described below).

In an effort to protect landscape connectivity on a regional scale, several research projects have been conducted to identify important habitat areas, as well as existing or proposed linkages or connectivity areas. Commissioned by CDFW, the following studies assess habitat connectivity on a large scale. *California Essential Habitat Connectivity (CEHC) Project* identified Natural Landscape Blocks, Small Natural Areas, and Essential Connectivity Areas (Spencer et al. 2010). *Critical Linkages: Bay Area and Beyond* identified Large Landscape Blocks and Linkage Designs (Science and Collaboration for Connected Wildlands [SCCW] 2014). *Missing Linkages: Restoring Connectivity to the California Landscape* identified critical and at-risk linkages (Penrod et al. 2001).

CORE HABITATS

Undeveloped or natural areas serve as core habitats, which are also called Natural Landscape Blocks (Spencer et al. 2010) or Large Landscape Blocks (SCCW 2014), for a variety of plant and wildlife species. Core habitat areas support the viability of rare plant or animal populations, or they consist of exemplary natural communities. Providing functional connectivity between core habitats through corridors is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and wildlife species. No core habitats are present along the Project corridor. The nearest core habitats are located north of Highway 1, in the foothills of the Santa Cruz Mountains, from Pogonip Park and Harvey West Park in the west to Anna Jean Cummings Park in the east. The CEHC Project and Critical Linkages both identify Nisene Marks State Park (further northeast) as a core habitat. The CEHC Project also identifies Pogonip Park and Harvey West Park as a Natural Landscape Block.

HABITAT PATCHES

Habitat patches or supportive natural landscapes are areas that may lack the requisite structural or spatial heterogeneity to be considered core habitat, but still provide relictual habitat for rare plants and/or provide opportunities for wildlife to forage, cover, and shelter. The CEHC Project identifies habitat patches as Small Natural Areas. Habitat patches may provide opportunities to manage and enhance rare plant populations. Within the study area and vicinity, the following areas are considered habitat patches or Small Natural Areas: Neary Lagoon Park, Jessie Street March/Ocean View Park open space, Tyrrell Park, Arana Gulch open space, and Twin Lakes State Beach open space.

LINEAR HABITATS

Linear habitats are riparian corridors and streamside buffers in developed landscapes that provide habitat for native plants, canopy cover, opportunities for foraging, and refuge from predators for wildlife species. In addition, riparian corridors and buffers offer plants and wildlife the opportunity to disperse (Beier and Loe 1992). In these ways, rivers, creeks and creekside buffers serve as both

linear habitats and corridors. Because riparian corridors support a disproportionate amount of biodiversity compared to other landscapes, retaining adequate riparian buffers enhances species richness by providing additional habitat with high quality habitat features (Hilty et al. 2006). When riparian corridors, buffers, and other linear habitats serve to link habitat patches (and thus allow movement between otherwise separate populations), the persistence of wildlife populations increases (Hilty et al. 2006).

Linear habitats in the Project vicinity include the aquatic and/or riparian habitats of Neary Lagoon, San Lorenzo River, Pilkington Creek, Woods Creek, the Santa Cruz Harbor (Woods Lagoon) and upstream Hagemann Gulch and Arana Gulch, Leona Creek and unnamed Stream 1545 (tributaries to Schwan Lagoon), and Rodeo Gulch (east of the alignment).

The rail corridor also serves as a linear habitat, in locations where adjacent cover from trees or other vegetation is present and where the corridor connects otherwise disjunct habitats (**Table 3.3-4**).

In Segment 8 (from the Beach Street/Pacific Avenue roundabout to the San Lorenzo River), the Project corridor is entirely developed and does not provide opportunities for wildlife movement or connection between disjunct habitats. The river and the SLR Trestle Bridge are barriers to movement for terrestrial wildlife.

In Segment 9, the rail corridor serves as linear habitat in several areas, as described below from west to east.

- Between the San Lorenzo River and Pilkington Creek, the rail corridor serves as a linear habitat for birds and enhances the limited habitat values of Pilkington Creek and downstream Tyrrell Park by providing additional cover, forage, shelter, and a hydration point. However, this segment of the corridor provides only marginal connectivity for other (terrestrial) wildlife, because of the steep mudstone cliffs, channelized river levee, and surrounding development that limit movement from the corridor westward to the San Lorenzo River and northward to Ocean View Park/Jesse Street Marsh.
- Between Pilkington Creek and Woods Creek, the rail corridor has varying limited cover and shelter (**Table 3.3-4**). However, relative to the developed surroundings, the corridor provides opportunities for wildlife movement, especially at night, to connect these otherwise disjunct habitat patches, as well as to Arana Gulch.
- Between the Santa Cruz Harbor and Twin Lakes State Beach open space, the rail corridor has more developed cover, which supports wildlife movement and connects the Arana Gulch open space to habitat patches to the east. The corridor also enhances the habitat values of the adjacent habitat patches and linear features. A coyote was observed utilizing this section of the corridor.

Table 3.3-4 Wildlife Movement along Segments 8/9 of the Rail Corridor, Santa Cruz County, CA

Rail Corridor Section	Supports Wildlife Movement	Connects Otherwise Disjunct Habitats	Enhances Habitat Values of Adjacent Habitat Patches/ Linear Habitats	Description
Beach Street/Pacific Avenue Roundabout to Raymond Street	None	None	None	This segment is developed.
Raymond Street to San Lorenzo River	Limited	None	None	Ornamental plantings provide limited refugia for birds and small terrestrial wildlife. The rail corridor intersects the channelized San Lorenzo River and tidal sandy beach. The trestle and river are barriers to movement for terrestrial wildlife species.
San Lorenzo River to Pilkington Creek	Limited	Limited	Limited	The eucalyptus grove provides refugia and connectivity for birds to the channelized San Lorenzo River, mudstone cliffs, Jessie Street Marsh/Oceanview Park to the north and, for a limited suite of wildlife species, to Pilkington Creek to the east and Tyrell Park downstream to the south. A wetland seeps out of the mudstone embankments and provides a hydration point; common chorus frogs are present. The trestle, steep mudstone embankments, and channelized river are barriers to movement for terrestrial wildlife.
Pilkington Creek to Bronson Street	Limited	Limited	None	This segment (with sparse ornamental plantings) is used by bolder terrestrial wildlife species (at night) and birds to access Woods Creek, the Santa Cruz Harbor and Arana Gulch to the east. The crossing at Seabright Avenue is a semipermeable barrier to wildlife movement; animals are likely to cross at night.
Bronson Street to Woods Creek and the Santa Cruz Harbor (Woods Lagoon)	Limited	Limited	Limited	Oak and cypress trees provide cover and shelter, but lack understory and are positioned on one side of the rail corridor on a relatively steep embankment. This stretch connects Pilkington Creek to the west with Woods Creek, the Santa Cruz Harbor and Arana Gulch to the east and north.
Woods Lagoon Railroad Bridge over Santa Cruz Harbor (Woods Lagoon)	None	None	Limited	The Santa Cruz Harbor enhances/diversifies the habitat values of the adjacent habitats, providing foraging opportunities. While birds can span the crossing, the Woods Lagoon Railroad Bridge is a barrier to terrestrial wildlife movement; however, terrestrial wildlife are able to move around the west side harbor to Arana Gulch and around the east side of the harbor to access the Project corridor east of the harbor. This alternate route is vegetated and provides cover and shelter.

Table 3.3-4 Wildlife Movement along Segments 8/9 of the Rail Corridor, Santa Cruz County, CA

Rail Corridor Section	Supports Wildlife Movement	Connects Otherwise Disjunct Habitats	Enhances Habitat Values of Adjacent Habitat Patches/ Linear Habitats	Description
East Santa Cruz Harbor to Assembly Avenue	Good	Good	Good	The rail corridor along this stretch is an extension of the bird rookery and potential monarch habitat located in the eucalyptus groves along the east side of the north harbor. The mature canopy provides cover, shelter, forage for animals moving between habitats to the west, Arana Gulch, and the Twin Lakes State Beach open space.
Assembly Avenue to 7th Avenue	Limited	Limited	None	Non-native forest and sparse ornamental plantings provide limited cover and shelter for wildlife moving between habitats to the west and the Twin Lakes State Beach open space to the east. 7th Avenue is a semipermeable barrier to movement; a coyote that was spooked out of the rail corridor crossed 7th Avenue during the daytime. Animals are more likely to cross at night.
7th Avenue to Twin Lakes State Beach open space (El Dorado Avenue)	Good	Good	Good	Developed and ruderal habitats at 7th Avenue transition to mature coast live oak forest, providing cover, shelter, and forage. The rail corridor serves to connect habitats to the east with the Twin Lakes State Beach open space.
Twin Lakes State Beach open space to 17th Avenue	Limited	Limited	Limited	Ornamental plantings and non-native forest provide limited cover and shelter for wildlife movement along this segment. Rodeo Gulch is approximately 0.7 miles east.

None – Lacking functions (movement, connectivity) and habitat values (cover, shelter, forage, hydration).

Limited – Provides at least minimal functions for some wildlife movement but may preclude movement of terrestrial species and/or lacks habitat values.

Good – Provides functions and habitat values

WILDLIFE MOVEMENT WITHIN THE STUDY AREA AND LARGER REGIONAL CONTEXT

Within the study area, the rail corridor and adjacent vegetation serves as a local corridor or linkage for wildlife movement within the developed areas of the City of Santa Cruz and unincorporated Live Oak. Situated within this largely urban setting, the rail corridor and the immediate surroundings are limited in diversity of habitat types (described under Habitat Characterization above). However, relative to the developed surroundings, the corridor provides varying degrees of cover, shelter, and forage, enabling wildlife access between aquatic features and habitat patches, including: Jessie Street Marsh, Ocean View Park, channelized San Lorenzo River, Pilkington Creek, Tyrrell Park, Woods Creek, Santa Cruz Harbor, Arana Gulch open space, Leona Creek, Stream 1545, Schwan Lagoon, and the Twin Lakes State Beach open space. Because the rail corridor is a linear habitat that runs essentially perpendicular to the San Lorenzo River, creeks, drainages, and riparian habitats within the study area, the rail corridor provides opportunities for wildlife movement between these aquatic features and otherwise disjunct habitat patches.

Based on observations made during field surveys, wildlife utilize the rail corridor for localized movement. Biologists observed individual wildlife species and/or their trails, tracks and scat within and adjacent to the Project corridor including: coyote, fox, black-tailed deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), and brush rabbit; owls, raptors foraging over the corridor; and migratory, resident and wintering bird species. Bobcat (*Lynx rufus*), opossum (*Didelphis marsupialis*), and skunk are likely to utilize the corridor as well. During 2021 maintenance activities along the rail corridor, biologists observed a coyote spooked out of the rail corridor just west of 7th Avenue into the Harbor Beach Court neighborhood, further confirming that coyote use the rail corridor for movement. Common lizards, amphibians, and invertebrates were also observed.

In the larger regional context, minimal connectivity exists between the linear habitats and habitat patches within the study area and the core habitats to the north of the study area. Channelized San Lorenzo River (west of the Project corridor), Arana Gulch (north of the Project corridor), and Rodeo Gulch (east of the Project corridor) provide marginal connectivity. The Santa Cruz Puma Project (2022) documents one female and several male mountain lions using these drainages to access the open spaces near the Project corridor from further inland, albeit rarely. Other species with large enough ranges, such as bobcat and coyote, may also use these marginal corridors.

3.3.2 Regulatory Setting

Federal, state, regional, and local regulations have been enacted to provide for the protection and management of sensitive biological and water resources. Those pertinent to the Project are summarized below.

Federal

Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973 (Title 16 United States Code, Section 1531 *et seq*., as amended) provisions protect federally listed Threatened and Endangered species and their habitats from unlawful "take."[15] Activities that may result in "take" of federally listed individuals are regulated by the USFWS and NOAA Fisheries, with responsibilities roughly divided between terrestrial and marine species, respectively, with some exceptions. Listed species are taxa for which proposed and final rules have been published in Federal Register (USFWS 2022a, b). Candidate species are not afforded any legal protection under FESA but typically receive special attention from federal and state agencies during the environmental review process (USFWS 2018c).

FESA or its implementing regulations do not prohibit take of listed plant species. However, federal agencies cannot undertake activities that would jeopardize the continued existence of a threatened or endangered plant. In addition, the removal of threatened or endangered plants may be a violation of the FESA under certain circumstances, if the action is not in compliance with state law.

For actions carried out, funded, or authorized by a federal agency, the project proponent initiates "Interagency Cooperation" with USFWS under Section 7 of the FESA, which ensures that actions do not "jeopardize[16] the existence of any listed species." Consultation under Section 7 may be informal or formal. If formal consultation is determined to be necessary, the USFWS prepares a biological opinion on whether the proposed activity will result in jeopardy or is "likely to adversely affect" the listed species. With this latter determination, the USFWS issues an "incidental take statement" that includes reasonable or prudent measures to minimize take along with the terms and conditions of the measures. NOAA Fisheries follows a similar process for the endangered and threatened species under their regulatory authority, including anadromous fish.

Designated "Critical Habitat" for plants or animals, determined and published in the Federal Register as a formal rule, receives protection under Section 7 through the prohibition of destruction or adverse modification of critical habitat by actions with a federal nexus.

For actions with no federal nexus, consultation with USFWS or NOAA Fisheries takes place under 10(a)(1)(B) of FESA.

[15] Section 3(18) of the FESA defines "take" to mean to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Service regulations (50 Code of Federal Regulations [CFR] 17.3) define "harm" to include significant habitat modification or degradation that actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering. "Harassment" is defined by USFWS as an intentional or negligent action that creates the likelihood of injury to listed species by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.

[16] Under the ESA, "jeopardy" occurs when an action is reasonably expected, directly or indirectly, to diminish a species' numbers, reproduction, or distribution so that the likelihood of survival and recovery in the wild is appreciably reduced.

Migratory Bird Treaty Act

All migratory birds and their nests are federally protected under the Migratory Bird Treaty Act of 1918 (MBTA) (Title 16 United States Code, Section 703–712 as amended; 50 Code of Federal Regulations Section 21; and 50 CFR Section 13) (and by California Department of Fish and Game Code provisions that support the act). The MBTA makes it unlawful to "take" any migratory bird or raptor listed in the 50 CFR Section 10, including their nests, eggs, or products.

Birds of Conservation Concern

The USFWS *Birds of Conservation Concern* (BCC) (USFWS 2008) was developed to fulfill the mandate of the 1988 amendment to the Fish and Wildlife Conservation Act [Public Law 100-653 (102 Statute 3825)] to "identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the FESA" and to stimulate coordinated and proactive conservation actions among federal and state agencies and private entities. The bird species included on the BCC lists include "nongame birds, gamebirds without hunting seasons, and Endangered Species Act candidates, proposed endangered or threatened, and recently delisted species" that USFWS considers to be of concern in the U.S. because of (1) documented or apparent population declines, (2) small or restricted populations, or (3) dependence on restricted or vulnerable habitats. Species on this list fall under the authority of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds" (Federal Register, vol. No, 11, January 17, 2001).

Bald Eagle Protection Act

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668-668d, 54 Stat. 250) as amended, provides for the protection of the bald eagle and the golden eagle by prohibiting the taking, possession, and commerce of such birds, their eggs, and their nests except under certain specified conditions. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Marine Mammal Protection Act

The Marine Mammal Protection Act of 1972 (50 CFR Part 18) (16 U.S.C. 1361–1407) prohibits "take"[17] of marine mammals (except under certain circumstances) to protect species and population stocks from decline. NOAA Fisheries may authorize incidental take during construction activities through project permitting.

Executive Order 13112 – Invasive Species

This order enlists federal agencies to prevent the introduction of invasive species, provide for their control and minimize the economic, ecological, and human health impacts that invasive species

[17] "take" = hunt, harass, capture, or kill or attempt to do so. Harassment = any act of pursuit, torment, or annoyance, which has the potential to:

- Injure a marine mammal or marine mammal stock in the wild (Level A harassment)
- Disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment)."

cause. In addition, federal agencies are required, when feasible, to restore native species and ecosystems and promote public awareness about invasive species.

Wetlands and Waters of the U.S.

Wetlands are defined by the USACE as, "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (USEPA, 40 CFR 230.3, and CE 33 CFR 328.3).

The USACE uses three criteria to delineate wetlands: the presence of (1) hydrophytic vegetation, (2) wetland hydrology, and (3) hydric soils. According to the USACE Manual, evidence of at least one positive wetland indicator from each parameter must be found in order to make a positive determination.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation, such as lakes and ponds, or convey water, such as streams, are considered "other waters." Along the central California coast, these other waters can include intermittent and ephemeral streams, as well as lakes and rivers. Other waters are identified by the presence of an ordinary high-water mark[18], a defined river or stream bed, or a bank, or by the absence of emergent vegetation in ponds or lakes.

Wetlands and other waters of the U.S., including streams, ponds and lakes, are regulated by the USACE and the Regional Water Quality Control Board (RWQCB) under Sections 401 and 404 of the Clean Water Act.

Federal Clean Water Act (Section 404)

Under Section 404 of the Clean Water Act, the USACE is responsible for regulating the discharge of fill material into waters of the U.S. The term "waters" includes wetlands and other waters that meet specific criteria as defined in the CFR (USEPA, 40 CFR 230.3, and CE 33 CFR 328.3). In general, a permit must be obtained before fill can be placed in wetlands or other waters of the U.S. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to discretion of the USACE.

Federal Clean Water Act (Section 401)

Section 401 of the Clean Water Act (CWA) assigns overall responsibility for water quality protection to the California State Water Resource Control Board and directs the nine statewide RWQCBs to develop and enforce water quality standards within their boundaries. A 401 Certification is required from the RWQCB whenever improvements are made within Jurisdictional Waters of the U.S.

Executive Order 11990

Executive Order 11990 (42 FR 26961, 3 CFR, 1977 Comp., p. 121) mandates that federal or federally assisted projects and programs minimize the destruction, loss, or degradation of wetlands and avoid new construction in wetlands, taking into account public health and safety, maintenance of natural systems, and other public interests.

[18] An ordinary high-water mark is defined as the natural line on the shore established by fluctuations of water.

National Marine Sanctuaries Act

The National Marine Sanctuaries Act of 1972 is a federal law that directs the National Oceanic and Atmospheric Administration (NOAA) to create national marine sanctuaries in special ocean areas of the United States and develop plans and regulations for their management. NOAA designated the Monterey Bay National Marine Sanctuary (MBNMS) in September 1992, and the MBNMS regulations include prohibiting activities such as ocean dumping and wildlife harassment. The Project study area is located adjacent to the MBNMS.

State

California Environmental Quality Act

As described in Chapter 1, *Introduction*, the Project is subject to CEQA, and the purpose of preparing an EIR is to inform public agency decision-makers and the public generally of the significant environmental effects of a project and identify possible ways to minimize the significant effects (*CEQA Guidelines*, Section 15121). A "significant effect" is defined as a substantial or potentially substantial adverse change in the physical conditions, including plants and animals (biological resources), within the area affected by the project (*CEQA Guidelines*, Section 15382).

As described in Section 3.3.3, *Methodology and Significance Thresholds*, a project would have a significant effect on biological resources, if it would have a substantial adverse effect, either directly or indirectly, on listed species. This includes plants and animals with the following protected status: federally listed Endangered or Threatened species under the FESA, federal Proposed and Candidate species, and species listed by the State of California as Endangered, Threatened, or Rare under the CESA or California Native Plant Protection Act (*CEQA Guidelines*, Section 15380).

In addition, under Section 15380(d), a species not included on any list recognized by the state "shall nevertheless be considered rare or endangered if the species can be shown to meet the criteria" for listing. The CDFW, USFWS, and U.S. Forest Service all maintain independent lists of species with designated conservation status that meet the *CEQA Guidelines* criterion for consideration. Based on provisions of Section 15380(d) of the *CEQA Guidelines*, lead agencies, in making a determination of impact significance, typically treat non-listed plant and animal species as equivalent to listed species, if the non-listed species satisfy the minimum biological criteria for listing. In assigning "impact significance" to populations of non-listed species, analysts generally consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.

California Endangered Species Act

The California Endangered Species Act (CESA) protects native plant and animal species (and their habitats) "in danger of, or threatened with, extinction because their habitats are threatened with destruction, adverse modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors" (California Fish and Game Code [CFGC] 1984, Section 2050–2116). CESA prohibits the "take"[19] of state-listed endangered, threatened, and candidate species. The CDFW maintains lists of Endangered, Threatened, and Rare plants (CDFW 2022a) and Endangered and Threatened animals (CDFW 2022b), as designated by the California Fish and Game Commission and under the California Native Plant Protection Act (NPPA) (1977). The Habitat Conservation Planning Branch of CDFW administers the state's rare species program. In addition to recognizing three levels

[19] The CESA defines "take" as hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill (CFGC Section 86).

of endangerment, CDFW can afford interim protection to candidate species while the California Fish and Game Commission reviews them. Habitat degradation or modification is not expressly included in the definition of "take" under the CFGC, but CDFW has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

California Native Plant Protection Act

The California NPPA (CFGC Section 1900–1913) was enacted in 1977 and allows the California Fish and Game Commission to designate plants as rare or endangered. The NPPA limits the circumstances in which endangered or rare native plants may be taken. Project permitting and approval requires compliance with NPPA.

California Native Plant Society Inventory

The CNPS prepares and regularly updates an *Inventory of Rare and Endangered Vascular Plants of California*. In general, CDFW qualifies for legal protection under CEQA those plant species on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere) or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the CNPS *Inventory* (CNPS 2022). Species on CRPR List 3 (Plants About Which We Need More Information--A Review List), or List 4 (Plants of Limited Distribution--A Watch List) are considered to be of lower sensitivity, and generally do not fall under specific federal or state regulatory authority. Specific mitigation considerations are not generally required for species in these two categories.

Species of Special Concern

In addition to lists of designated Endangered, Threatened, and Rare plant and animal species, CDFW maintains lists of animal "Species of Special Concern," most of which are species whose breeding populations in California may face complete destruction or extirpation (Bolster 1998, Shuford and Gardali 2008, Moyle et al. 2015, Thompson et al. 2016, CDFW 2022d, CDFW CNDDB 2022). Although these species have no legal status under the CESA, CDFW recommends considering these species during analysis of proposed project impacts to protect declining populations, and to avoid the need to list them as threatened or endangered in the future. These species may "be considered rare or endangered [under CEQA] if the species can be shown to meet the criteria."

California Fish and Game Code and California Code of Regulations

CFGC protects the active nests and eggs of birds from take, possession, or needless destruction (3503), and prohibit the take, possession, or destruction birds of prey (orders Falcinoformes and Strigiformes) and their eggs and nests (3503.5). CFGC (Sections 86; 2000; 2002; 2014; 3000–3012; 4150) and several sections under Title 14 of CCR protect non-listed bat species and their roosting habitat, including individual roosts and maternity colonies (14 CCR Section 472). Section 86 of CFGC generally defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Other CFGC sections prohibit the willful take, capture, confinement, possession, or destruction of particular wildlife species, including bats and other nongame mammals. CCR Title 14 provisions also prohibit the take of nongame birds and mammals, including bats.

Fully Protected Species

The CFGC contains lists of vertebrate species designated as "Fully Protected" (CFGC 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], and 5515 [fish]). This classification was the state's

initial effort in the 1960s to identify and provide protection to those animals that were rare or faced possible extinction. Fully Protected species generally may not be taken or possessed at any time and no licenses or permits may be issued for their take except pursuant to an approved Natural Community Conservation Plan (NCCP) or for relocation of bird species, the protection of livestock, or the collection of those species necessary for scientific research. Impacts on these species are also considered under CEQA.

Western Bat Working Group Lists

The WBWG maintains a region-by-region matrix of the status of bat species throughout their western North American range. Bats that are designated as "High Priority" by the WBWG are "imperiled or are at high risk of imperilment" based on available information on distribution, status, ecology, and known threats (WBWG 2017). Bats may also be designated as medium-or low-priority. These designations are included on CDFW's Special Animals list of sensitive wildlife species (CDFW CNDDB 2022). High Priority bat species qualify for legal protection under Section 15380(d) of the *CEQA Guidelines*.

Sensitive Habitats

Sensitive habitats include CDFW Sensitive Natural Communities (rank of S1–S3), riparian corridors,[20] wetlands, and habitats for species that are protected under FESA, CESA, NPPA, or other rare species (CDFW 2022c). Sensitive habitats may also include areas of high biological diversity, areas providing important wildlife habitat, and vegetation types that are rare or unique to the region. CEQA also considers impacts to natural communities identified as sensitive in local and regional plans, regulations, and ordinances.

Wetlands and Waters of the State

CDFW Lake and Streambed Alteration

Jurisdictional authority of CDFW over relatively permanent bodies of standing or flowing water is established under Sections 1600–1616 of the CFGC, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The CFGC stipulates that "an entity may not substantially divert or obstruct the natural flow of, or substantially change…the bed, channel, or bank of, any river, stream, or lake" without notifying CDFW, incorporating necessary mitigation, and obtaining a Lake and Streambed Alteration Agreement. Any work which takes place below the break in bank would be under the jurisdictional authority of CDFW.

The code defines "entity" to mean "any person, state or local government, or public utility that is subject to this chapter" and is not generally taken to refer to federal agencies. If an entity does not initially accept the mitigation conditions proposed by CDFW for inclusion in a streambed alteration agreement, the matter may be submitted to an arbitration panel under Section 1603.

CDFW has the opportunity to review projects and issue project conditions under CEQA and is also responsible for commenting on projects requiring USACE permits under the Fish and Wildlife

[20] A universally accepted definition of riparian habitat is not currently available; however, USFWS defines riparian areas as "plant communities contiguous to and affected by surface and subsurface hydrologic features of perennial or intermittent lotic and lentic water bodies (rivers, streams, lakes, or drainage ways). Riparian areas have one or both of the following characteristics: 1) distinctively different vegetative species than adjacent areas, and 2) species similar to adjacent areas but exhibiting more vigorous or robust growth forms. Riparian areas are usually transitional between wetland and upland" (USFWS 2009). See also *Riparian Habitats* under the *Local Regulations* section.

Coordination Act of 1958. Federal lead agencies may also elect to notify CDFW according to Section 1602 and comply with the conditions and recommendations issued under this mechanism.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Act (CSWRCB 2022) assigns overall responsibility for water quality protection to the California State Water Resource Control Board, and directs the nine statewide RWQCBs, who are tasked to develop and enforce water quality standards within their boundaries. Under California state law, “Waters of the State" pertains to “any surface water or groundwater, including saline waters, within the boundaries of the state.” As a result, water quality laws and permitting authority apply to both surface and groundwater. In the absence of a federal permit requirement, impacts to waters of the state, including wetlands, require a Waste Discharge Requirement (WDR) authorization from the RWQCB (CSWRCB 2022).

THE WETLANDS RESOURCES POLICY

The Wetlands Resources Policy of CDFW states that the California Fish and Game Commission will strongly discourage development in or conversion of wetlands, unless, at a minimum, project mitigation ensures that there will be no net loss of either wetland habitat values or acreage.

California Coastal Act

Under the Coastal Zone Management Act of 1972 and California Coastal Act of 1976, the California Coastal Commission is entrusted to review proposed development in the Coastal Zone with the goal of protecting and enhancing the coastal environment while allowing utilization and public access for Coastal Zone-dependent uses. When a federal agency serves as the lead for the project, the mechanism for Coastal Commission review is through a “consistency determination” in which the project would be required to comply with the statues of the Coastal Act with the Local Coastal Program providing guidance.

Under the Coastal Act, Environmental Sensitive Habitat Areas (ESHA)[21] and wetlands are given special protection, with a different set of rules for each. Allowed uses within ESHA are limited to those that are resource-dependent; and uses within wetlands are limited to a specific list of activities, which includes “nature study” and “similar resource-dependent activities.” (Compare Cal. Pub. Resources Act Sections 30240 [ESHA] and 30233 [wetlands].)

ESHA “shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.” “Development in areas adjacent to [ESHA] … shall be sited and designed to prevent impacts which would significantly degrade those areas and shall be compatible with the continuance of those habitat … areas.”

In Coastal Act wetlands – all areas meeting at least one wetland parameter – a handful of specifically authorized uses, including “nature study” and “similar resource-dependent activities,” are permitted, but only where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects.”

In *Bolsa Chica Land Trust v. Superior Court* (1999) 71 Cal.App.4th 493, 514–515, the California Court of Appeal held that, where an area in the Coastal Zone is both a wetland and an ESHA, the Coastal

[21] Under the Coastal Act, ESHA is defined as “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.” ‘Especially valuable habitat’ (EVH) is identified by 1) by its **special nature** or 2) its **special role** in the ecosystem.

Act provision governing wetlands (§ 30233) controls, and the provision governing ESHA (§ 30233) does not also apply.

The Coastal Commission has approved several paved multi-use projects located in or adjacent to ESHA and wetlands, with identified goals of facilitating public access and protecting sensitive resources. In many of these approvals, the Commission determined that the public access, recreation, and educational benefits of the project were dependent on their location within the natural habitat. Interpretive signs and resource management plans were imperative to successfully protecting and enhancing sensitive habitats, while also improving public access in the Coastal Zone.

Based on the legal standards and Coastal Commission experience described above, the Proposed Project can achieve consistency with the Coastal Act as follows. Where a proposed trail segment would pass through an ESHA, it must be designed to prevent "any significant disruption of habitat values." Where a trail segment would be adjacent to ESHA, it must be "sited and designed to prevent impacts which would significantly degrade" the ESHA, and "be compatible with the continuance of" the ESHA. Where a trail segment would pass through a wetland, "feasible mitigation measures" must be "provided to minimize adverse environmental effects"; and the overall trail alternative chosen must be the least environmentally damaging feasible alternative with respect to wetlands effects.

Local

Santa Cruz County General Plan and Local Coastal Program

The Santa Cruz County General Plan and Local Coastal Program provides the following objectives and policies to protect biological resources within the Coastal Zone (Santa Cruz County 1994).

- **Objective 5.1, Biological Resource Protection.** To maintain the biological diversity of the County through and integrated program of open space acquisition and protection, identification and protection of plant habitat and wildlife corridors and habitats, low-intensity and resource compatible land uses in sensitive habitats and mitigations on projects and resource extraction to reduce impacts on plant and animal life.
    - **Policy 5.1.2, Sensitive Habitat Definition.** An area is defined as a sensitive habitat if it meets one or more of the following criteria:
        (a) Areas of special biological significance as identified by the California State Water Resources Control Board.
        (b) Areas which provide habitat for locally unique biotic species/communities, including coastal scrub, maritime chaparral, native rhododendrons, and associated Elkgrass, mapped grasslands in the Coastal Zone, and sand parkland' and Special Forests including San Andreas Coast Live Oak Woodlands, Valley Oak, Santa Cruz Cypress, indigenous Ponderosa Pine, indigenous Monterey Pine and ancient forests.
        (c) Areas adjacent to essential habitats of rare, endangered or threatened species as defined by (e) and (f) below.
        (d) Areas which provide habitat for Species of Special Concern as listed by the California Department of Fish and Game [Wildlife] in Special Animals list, Natural Diversity Database.
        (e) Areas which provide habitat for rare or endangered species which meet the definition of Section 15380 of the California Environmental Quality Act.

(f) Areas which provide habitat for rare, endangered or threatened species as designated by the State Fish and Game Commission, United States Fish and Wildlife Service, or CNPS.

(g) Near-shore reefs, rocky intertidal areas, seacaves, islets, offshore rocks, kelp beds, marine mammal hauling grounds, sand beaches, shorebird roosting, resting and nesting areas, cliff nesting areas and marine, wildlife or educational/research reserves.

(h) Dune plant habitats.

(i) All lakes, wetlands, estuaries, lagoons, streams and rivers.

(j) Riparian corridors.

- **Policy 5.1.3, Environmentally Sensitive Habitat Area (ESHA) Protection.** Designate the areas described in 5.1.2 (d) through (J) as Environmentally Sensitive Habitats per the California Coastal Act and unless other uses are:

  (a) consistent with habitat protection policies and serve a specific purpose beneficial to the public;

  (b) it is determined through environmental review that any adverse impacts on the resource will be completely mitigated and that there is no feasible less-damaging alternative; and

  (c) legally necessary to allow a reasonable economic use of the land, and there is no feasible less-damaging alternative.

- **Policy 5.1.6, Development in Sensitive Habitats.** Sensitive Habitats shall be protected against a significant disruption of habitat values; and any proposed development within or adjacent to these areas must maintain or enhance functional capacity of the habitat. Reduce in scale, redesign, or if no other alternative exists, deny any project which cannot sufficiently mitigate significant adverse impacts on sensitive habitats unless approval of project is legally necessary to allow a reasonable use of the land.
- **Policy 5.10.4, Preserving Natural Buffers.** Preserve the vegetation and landform of natural wooded hillsides which serve as a backdrop for new development. Also comply with policy 8.6.6 regarding protection of ridgetops and natural landforms.
- **Policy 5.10.8, Significant Tree Removal Ordinance** (LCP). Maintain the standards in the County's existing ordinance which regulates the removal of significant trees and other major vegetation in the Coastal Zone, and provide appropriate protection for significant trees and other major vegetation in areas of the County located within the Urban Services Line.

Santa Cruz County Urban Forest Master Plan

The 1992 Santa Cruz County Urban Forestry Master Plan (Santa Cruz County 1992) was developed as a comprehensive urban forestry and street tree program. This plan was originally developed for the County Redevelopment Agency to commit funding, prioritize projects, develop a uniform tree program, provide for appropriate maintenance, and enhance community image. The program was also designed to assist with mitigation for Redevelopment Agency projects. The agency was dissolved in 2012 and the County Board of Supervisors was named as the Successor agency. Remaining projects and responsibilities were incorporated into the Santa Cruz County Planning, Public Works, and Parks Departments. The following goals and objectives are outlined in the Urban Forest Master Plan:

1. Create community identity,
2. Integrate design and responsible planting practices with environmental and functional planting requirements for each site,
3. Mitigate the adverse physical and visual impacts of streets,
4. Preserve, enhance, and expand the existing urban forest,
5. Establish and maintain a coordinated, timely, high quality, and efficient program of management and maintenance for public trees, and
6. Promote and foster public awareness, interest and support for urban forestry efforts.

Urban streetscape designs outlined in the concept plan element of the Plan attempt to connect newly planted "Heritage groves" of regional natives at regularly spaced intervals throughout the County right-of-way (ROW) connected by a mosaic of highway and riparian "gateways" and linear streetscape plantings. Heritage groves would be composed of prominent native trees including coast redwood, coast live oak, tanoak, and buckeye that provide visual context to the natural Heritage and biogeography of the community. Riparian gateways placed at strategic locations adjacent to urban watercourses include recommended plantings of white alder, box elder, blue elderberry, big leaf maple, and western sycamore.

County of Santa Cruz Significant Tree Ordinance

The County of Santa Cruz regulates the removal of "significant trees" in the Coastal Zone (County Code, Section 16.34). Within the urban and rural services line, significant trees are those greater than 20 inches in diameter at breast height (DBH) for single stemmed trees; any sprout clump of five or more stems each of which is greater than 12 inches DBH; or any group consisting of five or more trees on one parcel, each of which is greater than 12 inches DBH. Outside the urban services or rural services line where visible from a scenic road, any beach, or within a designated scenic resource area, significant trees include those equal to or greater than 40 inches DBH (approximately 10 feet in circumference); any sprout clump of five or more stems, each of which is greater than 20 inches DBH (approximately 5 feet in circumference); or, any group consisting of 10 or more trees on one parcel, each greater than 20 inches DBH. No stipulations are made for native versus non-native and/or ornamental trees. Exceptions are made for trees that are diseased or deemed hazardous to public safety; or pursuant to a Timber Harvest Plan or Fire Protection Plan submitted to and approved by the California Department of Forestry. Removal of significant trees would require a permit issued by the County of Santa Cruz Community Development and Infrastructure Department and would likely require mitigation including, but not limited to, planting of replacement trees at a ratio and species composition determined by the Planning Department.

County of Santa Cruz Sensitive Habitat Protection Ordinance

The County of Santa Cruz Sensitive Habitat Protection ordinance (County Code, Section 16.32) is intended to "minimize the disturbance of biotic communities which are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activity." Sensitive habitats under the Santa Cruz County Code relevant to the Project include areas that provide habitat for locally unique biotic species/communities, such as oak woodlands and coastal scrub; areas adjacent to essential habitats of rare, endangered or threatened species, or other rare species considered under CEQA; dunes, wetlands, lagoons, rivers, and riparian corridors; and areas defined as ESHA under the Coastal Act.

The Project is required to mitigate any unavoidable environmental impacts to sensitive habitats. The ordinance calls for protection of sensitive habitats "undisturbed by the proposed development

activity" or on an adjacent parcel through measures such as conservation easements. Additionally, restoration "commensurate with the scale of the proposed development" is required for degradation of sensitive habitats caused by the project. Exemptions to this ordinance may be granted concurrently with authorized riparian exceptions.

County of Santa Cruz Riparian Corridor and Wetlands Protection Ordinance

The County of Santa Cruz Riparian Corridor and Wetlands Protection (County Code, Section 16.30) limits development activities in riparian areas[22] and provides buffer/setback requirements[23] based on slope and vegetation composition. The Santa Cruz County Planning Commission may authorize a riparian setback exception on a case-by-case basis. Exceptions are granted pending an approved application stating the applicant's proposed activities, best management practices (BMP), and measures for mitigating impacts to the riparian corridor.

City of Santa Cruz General Plan

The Natural Resources and Conservation Element of the City of Santa Cruz General Plan (City of Santa Cruz 2012) includes several goals, policies and actions to protect the biological resources found within the City. The goals, policies, and actions applicable to the Project are discussed below.

- **Goal NRC1:** Protected, enhanced, and sustainably managed creek systems, riparian environments, and wetlands.
    - **NRC1.1** Protect the city's river and wetland areas while increasing and enhancing public access where appropriate.
    - **NRC1.1.1** Require setbacks and implementation of standards and guidelines for development and improvement within the city and adjacent to creeks and wetlands as set forth in the Citywide Creeks and Wetlands Management Plan.
- **Goal NRC2:** Protected, enhanced, and sustainable native and natural plant and animal communities and habitats.
    - **NRC2.1** Protect, enhance, or restore habitat for special-status plant and animal species. Cf. CD4.3.3, CC3.3.6 and NRC2.2, 2.4, and 6.3.
    - **NRC2.2** Protect sensitive habitat areas and important vegetation communities and wildlife habitat, to include riparian, wetland (salt marsh and freshwater wetland), coastal prairie, coastal bird habitat, and habitat that support special status species, as well as sensitive and edge habitats ("ecotones"). Cf. CD4.3.3, CC3.3.6, and NRC2.1, 2.4, and 6.3.
    - **NRC2.2.1** As part of the CEQA review process for development projects, evaluate and mitigate potential impacts to sensitive habitat (including special-status species) for sites located within or adjacent to these areas.
    - **NRC2.2.4** Minimize the impact of grading and filling on sensitive habitat areas.
    - **NRC2.3** Protect, enhance, and maintain significant dispersal corridors and buffers.
    - **NRC2.3.1** Restrict the use of barriers that can hamper wildlife movement through the corridors and buffers.

[22] The Santa Cruz County Code defines riparian vegetation/woodland as "those plant species/woody plant species that typically occur in wet areas along streams or marshes" (Santa Cruz County Code 16.30.030). See also USFWS definition of riparian habitat under the *Sensitive Habitats* section (USFWS 2009).

[23] The ordinance states that a buffer "shall always extend 50 feet beyond the edge of riparian woodland for perennial streams and 20 feet beyond the edge of other woody vegetation as determined by the dripline" (Section 16.3.040).

- **Goal NRC5:** An enhanced and sustainable urban forest.
  - **NRC5.1** Protect and manage tree resources in the urban environment with emphasis on significant and heritage trees.
  - **NRC5.1.2** Maintain and add to the City's urban tree canopy and increase tree diversity within urbanized areas using native and non-native tree species.

City of Santa Cruz City-Wide Creeks and Wetlands Management Plan

Adopted by the City of Santa Cruz in 2006 and the California Coastal Commission in 2008, the City-Wide Creeks and Wetlands Management Plan formally delineated over 39 miles of watercourses and numerous wetlands within the City of Santa Cruz jurisdictional boundaries. Because lands adjacent to the riparian corridors associated with these watercourses and subject to development may also be critical linear habitats and link larger open spaces and resources, the Management Plan establishes buffers along riparian corridors to protect the creek environment and its functions as a corridor. The Plan presents an overall, strategic approach to protecting, enhancing, and managing the City's riparian and wetland resources and water quality while providing a consistent and predictable City permitting process. The Management Plan:

- Identifies and maps the watercourses and known wetlands within the City limits, including those that would be subject to site-specific review for such requirements as setbacks;
- Identifies appropriate development and management setbacks;
- Recommends management actions to promote the preservation of riparian and wetland resources;
- Sets guidelines and standards for areas where development adjacent to watercourses may be appropriate;
- Provides a framework for permitting development adjacent to watercourses.

Section 24.08.21 of the City of Santa Cruz Municipal Code regulates development adjacent to City watercourses, consistent with provisions of the adopted City-Wide Creeks and Wetlands Management Plan, including requirements for issuance of a "watercourse development permit."

City of Santa Cruz Heritage Tree Ordinance

The City of Santa Cruz Heritage Tree Ordinance regulates any activity that will significantly impact or remove a Heritage tree or shrub. Heritage trees and shrubs include any tree, grove of trees, shrub or group of shrubs, growing on public or private property within the City limits of the City of Santa Cruz which meet(s) the following criteria shall have the "Heritage" designation:

A. Any tree which has a trunk with a circumference of forty-four inches (approximately fourteen inches in diameter or more), measured at fifty-four inches above existing grade;
B. Any tree, grove of trees, shrub or group of shrubs which have historical significance, including but not limited to those which were/are:
   1. Planted as a commemorative;
   2. Planted during a particularly significant historical era; or
   3. Marking the spot of an historical event.
C. Any tree, grove of trees, shrub or group of shrubs which have horticultural significance, including but not limited to those which are:
   1. Unusually beautiful or distinctive;
   2. Old (determined by comparing the age of the tree or shrub in question with other trees or shrubs of its species within the city);

3. Distinctive specimen in size or structure for its species (determined by comparing the tree or shrub to average trees and shrubs of its species within the city);
4. A rare or unusual species for the Santa Cruz area (to be determined by the number of similar trees of the same species within the city);
5. Providing a valuable habitat; or
6. Identified by the city council as having significant arboricultural value to the citizens of the city (Ord. 94-01 Section 2, 1994).

Removal of significant trees would require a permit issued by the City of Santa Cruz Parks and Recreation Department and would likely require mitigation including, but not limited to, planting of replacement trees at a ratio and species composition determined by the Parks and Recreation Department. Exemptions are made for emergencies involving dead or diseased trees that pose an immediate danger to life or property. In these instances, pruning or removal of a Heritage tree/shrub may be authorized by the director or by a responsible member of the police, fire, or public works department.

3.3.3 Methodology and Significance Thresholds

Methodology

This section describes the potential environmental impacts of the Proposed Project: Trail next to Rail line (Ultimate Trail Configuration) and the Optional First Phase: Trail on the Rail line (Interim Trail) relevant to biological resources. The impact analysis is based on an assessment of baseline conditions for the Project corridor. The methodology for identifying the biological resources within and adjacent to the Project corridor is described above in Section 3.3.1, *Existing Conditions*.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of biological resources, as well as the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For purposes of this EIR, a significant impact would occur if implementation of the Proposed Project: Trail next to Rail line (Ultimate Trail Configuration) or the Optional First Phase: Trail on the Rail line (Interim Trail) would result in any of the following conditions.

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS
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 CDFW or USFWS
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
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

Regarding Threshold F, there is no applicable adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state Habitat Conservation Plan. Therefore, there would be No Impact, and this topic is not addressed further in this EIR.

3.3.4 Project Impact Analysis

In the Project impact analysis, potentially significant impacts are presented in the order of the significance thresholds A-E listed above. Mitigation measures have been developed to reduce these impacts to a less than significant level. A detailed description of each mitigation measure is provided with its corresponding impact statement (i.e., the impact for which it was developed). Some mitigation measures reduce the significance of more than one impact and are so referenced in the Project impact analysis below. For example, Mitigation Measure BIO-9a was developed to mitigate Impact BIO-9 and is fully described under the discussion for Impact BIO-9. In addition, Mitigation Measure BIO-9a serves to mitigate Impact BIO-1 and is referenced (but not fully described) under Impact BIO-1.

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold 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.
Threshold 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 Game or US Fish and Wildlife Service.
Threshold C:	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
Threshold 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.
Threshold E:	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact BIO-1 THE PROJECT COULD ADVERSELY AFFECT STATE ENDANGERED AND FEDERALLY THREATENED SANTA CRUZ TARPLANT. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Proposed Project (Ultimate Trail) could result in adverse effects to Santa Cruz tarplant and its habitat in Twin Lakes State Beach as a result of tree removal and vegetation clearing during construction, as well as from operation (trail use) of Segment 9, within the County's jurisdiction. This species does not occur or have the potential to occur within Segment 8 or the portion of Segment 9 that is within the City's jurisdiction.

The Santa Cruz tarplant is listed as Threatened under FESA (USFWS 2002) and Endangered under CESA (1979). In the 1994 County o Santa Cruz General Plan and LCP, the County recognizes sensitive habitat as "areas which provide habitat for species which meet the definition of Section 15380 of the CEQA guidelines." Santa Cruz tarplant meet this criterion. Project construction requires vegetation removal and grading within the rail corridor on the south side of the rail line along Twin Lakes State Beach open space, less than 75 feet from the northernmost tarplant occurrence (**Figure 3.3-4b**). As described in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration),* under *Rail Realignment*, the rail tracks would be realigned up to 7.5 feet southward for approximately 1,670 feet within the rail corridor, from approximately 500 feet west of 7th Avenue to approximately 1,100 feet east of 7th Avenue. However, removal of this vegetation and track realignment would not result in direct take (injury or extirpation) of tarplant or potential habitat, but could result in effects from construction activities and trail use that extends outside the rail corridor. Drainage improvement proposed for the Project corridor would not adversely affect tarplant because the Project corridor is significantly lower in elevation that the grassland terrace that supports the tarplant.

Construction

Project construction could result in impacts to Santa Cruz tarplant habitat from stockpiling of debris and soils, staging equipment outside the rail corridor, and alteration of habitat through disturbance to soils and hydrology. Although Santa Cruz tarplant can tolerate and even necessitates moderate disturbance, prolonged trampling from construction activities could destroy plants prior to seed set, thereby extirpating this population by compacting soils, trampling plants prior to seedset, disturbing pollinators, and introducing/dispersing invasive weeds. As described in Section 2.6.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, the Project includes several construction BMPs to minimize construction impacts on biological resources, but additional mitigation is necessary to reduce this impact to a less than significant level.

Mitigation Measure BIO-1a provides specific protections for the Santa Cruz tarplant population in Twin Lakes State Park.

Mitigation Measure BIO-9a, which is identified for and described in detail under Impact BIO-9, would minimize construction activities in and adjacent to sensitive habitats and requires all sensitive biological resources to be identified on project plans and temporary protective construction fencing installed to minimize and prevent inadvertent disruption to the habitat.

Mitigation Measure BIO-9c, which is identified for and described in detail under Impact BIO-9, would further reduce impacts related to construction activities and timing. During construction, Santa Cruz tarplant would be protected to the extent feasible through installation of temporary

protective fencing to minimize the disturbance footprint, restricting construction equipment, operations, staging, and access to designated areas. Other nearby coastal terrace prairie grassland with potential to support tarplant in this area will also be protected during construction activities.

Therefore, this construction-related impact **would be less than significant with mitigation** (Mitigation Measures BIO-1a, BIO-9a, BIO-9c).

Operation

Trail operation could result in impacts to Santa Cruz tarplant habitat due to increased usage of Twin Lakes State Beach trails, trampling by pets, and introduction and/or expansion of invasive weeds. As described in Section 2.4, *Project Characteristics*, under *Trail Features* under *Fencing and Guardrails*, the Ultimate Trail Configuration could include safety fencing in Segment 9 to separate trail users from the rail, as needed. If present, this fencing would restrict entrance to Twin Lakes State Beach in the immediate vicinity of the Santa Cruz tarplant. However, because fencing is not a certainty at this time, Mitigation Measure BIO-1b would require fencing in this section to protect the tarplant population.

The formal entrance to the open space will remain at its current location in the west portion of the Simpkins Swim Center Parking Lot where the Ultimate Trail Configuration shifts from the inland to the coastal side of the tracks, which is over 1,000 feet east of the known tarplant occurrence. While the fencing would discourage trail users from entering Twin Lakes State Beach, implementation of Mitigation Measure BIO-9b would provide additional protective measures for sensitive habitat, including Santa Cruz tarplant.

Mitigation Measure BIO-9b, which is identified for and described in detail under Impact BIO-9, outlines the development of a Project-specific Biological Resources Mitigation and Management Plan (MMP), which would mitigate temporary disturbance and permanent loss of sensitive habitats and mitigate impacts to other sensitive biological resources, including Santa Cruz tarplant, known to occur within the Project corridor. The MMP would include provisions to protect and enhance the functions and values of sensitive habitat, including existing tarplant habitat. The MMP would also include provisions for protections and enhancement of coastal terrace prairie habitat including split-rail or wire fencing and interpretive signage to inform trail users about these resources.

Therefore, this impact from trail operation would be **less than significant with mitigation** (Mitigation Measure BIO-9b).

Mitigation Measure BIO-1a: Implement Protections for the Santa Cruz tarplant population in Twin Lakes State Park

During construction of Segment 9, the City and/or County (depending on implementing agency/jurisdiction) shall coordinate to ensure the following measures are implemented to protect the federally Threatened and California State Endangered Santa Cruz tarplant at Twin Lakes State Beach:

- Prior to construction activities adjacent to Twin Lakes State Beach open space, identify the Santa Cruz tarplant occurrence in Twin Lakes State Beach on project plans and mark the edge of the population in the field with flagging to avoid construction-related impacts,
- Prior to trail use, enclose the coastal terrace prairie grassland occupied by Santa Cruz tarplant with protective wildlife-friendly (e.g., spit-rail) fencing,

- Add interpretative signage with Santa Cruz tarplant life history and rarity information, and
- Coordinate with State Parks biologists to monitor and enhance tarplant population using techniques identified by the Arana Gulch Adaptive Management Working Group[24]. These may include seeding, out-planting, cardboard mulch, mowing, and/or hand weeding.

Mitigation Measure BIO-1b: Install Permanent Fencing between Interim Trail and Twin Lakes State Beach near Santa Cruz Tarplant Habitat)

During construction of Segment 9, the City and/or County (depending on implementing agency/jurisdiction) shall coordinate to ensure final project design includes installation of fencing (wildlife friendly[25]) between the Trail and Twin Lakes State Beach near the tarplant population. The fencing shall extend for approximately 1,100 linear feet, from Leona Creek to the Simpkins Swim Center parking lot, to discourage trail users from entering Twin Lakes State Beach and creating new trails that could result in disturbance to the protected species. Additionally, signage shall be placed on the fencing, indicating the adjacent habitat protection area and directing users to the existing trail access near Simpkins Swim Center with arrow pointing eastward.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing.

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)

The Interim Trail option will have similar potential for adverse effects on the Santa Cruz tarplant as the Proposed Project (Ultimate Trail).

1) Implementation of Interim Trail

Implementation of Part 1 of the optional Interim Trail would not result in direct take of the Santa Cruz tarplant. However, there could be adverse effects to the Santa Cruz tarplant population from construction and operation of the trail, similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. During construction, impacts could occur from removal of the existing rail tracks/ties, equipment staging, stockpiling debris, and introduction/dispersal of invasive species. Trail operation could result in impacts to tarplant from increased visitation and usage in Twin Lakes State Beach, trampling by pets, and introduction and/or expansion of invasive weeds. These construction and operation impacts would be mitigated to a less than significant level with implementation of Mitigation Measures BIO-1a, BIO-9a, BIO-9b, and BIO-9c.

[24] The Arana Gulch Adaptive Management Working Group (AMWG) is a collection of scientists, regulators, City of Santa Cruz representatives, and the public working to improve habitat conditions for the Santa Cruz tarplant at Arana Gulch Open Space as required by the Arana Gulch Habitat Master Plan (2013).

[25] Wildlife-friendly fencing provides a 17-inch clearance between the bottom wire and ground, which provides adequate room for most small to medium wildlife to pass and has a maximum height of 4.5 feet to allow larger wildlife (e.g., deer) pass over the top wire. Options include split-rail fencing or post and smooth wire fencing. Fencing shall be marked to be visible to wildlife.

For Part 1 of the Interim Trail, there would be no rail and therefore no potential fencing separating the trail from the park that would discourage trail users from leaving the trail. Therefore, it would be easier for trail users to leave the trail and enter Twin Lakes State Beach west of the formal entrance to the park at the Simpkins Swim Center parking lot. This could result in the creation and use of new informal trails that could adversely affect the Santa Cruz tarplant population from trampling, pets, and introduction of pathogens and invasive weeds. Mitigation Measure BIO-1b would reduce this operational impact to a less than significant level by requiring the installation of protective fencing between the Interim Trail and Twin Lakes State Beach near the tarplant population.

Therefore, the impact would be **less than significant with mitigation** (Mitigation Measures BIO-1a, BIO-1b, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-1a: Implement Protections for the Santa Cruz tarplant population in Twin Lakes State Park

Mitigation Measure BIO-1b: Install Permanent Fencing between Interim Trail and Twin Lakes State Beach near Santa Cruz Tarplant Habitat

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) could have similar adverse construction-related effects to the Santa Cruz tarplant as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail (Part 1). However, there would be no operational impact associated with Part 2 because there would be no trail. With implementation of the BMPs identified in the project description (Section 2.6) and the same mitigation measures identified for construction of the Ultimate Trail Configuration and optional Interim Trail (Part 1), the construction-related impact to Santa Cruz tarplant would be **less than significant with mitigation** (Mitigation Measures BIO-1a, BIO-9a, BIO-9c).

Mitigation Measure BIO-1a: Implement Protections for the Santa Cruz tarplant population in Twin Lakes State Park

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* for construction and operational impacts. Refer to the discussion for Impact BIO-1,

under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant with mitigation** (Mitigation Measures BIO-1a, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-1a: Implement Protections for the Santa Cruz tarplant population in Twin Lakes State Park

Mitigation Measure BIO-1b: Install Permanent Fencing between Interim Trail and Twin Lakes State Beach near Santa Cruz Tarplant Habitat

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of construction and operation of Parts 1, 2, 3 of the Interim Trail would be an overall increase in potential effects to the Santa Cruz tarplant due to the requirement for two additional construction periods and the potential for impacts to the tarplant during each part. Mitigation would reduce the impacts to a less than significant level. Therefore, the impacts would be **less than significant with mitigation**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have greater impacts to the Santa Cruz tarplant because the Interim Trail subjects the tarplant to three different construction periods with potential to cause direct and indirect harm to this occurrence, whereas the Ultimate Trail only has one construction period. Additionally, the Interim Trail would not have fencing separating trail users from the rail, as well as Twin Lakes State Park and the tarplant population, which increases potential impacts to the tarplant from the creation and use of new trails that could adversely affect the tarplant population from trampling, pets, and introduction of pathogens and invasive weeds. Thus, the Interim Trail requires additional mitigation to reduce this impact. Further, due to the shifted orientation of Part 1 of the Interim Trail onto the existing rail line, some impacts resulting from the Interim Trail south of the existing tracks are not required for the Ultimate Trail. Thus, completing the Proposed Project, with the optional Interim Trail and constructing the Ultimate Trail Configuration as Part 3 of the Interim Trail, would result in greater potential impacts than constructing the Proposed Project without the optional Interim Trail.

Impact BIO-2 THE PROJECT COULD ADVERSELY AFFECT MONARCH BUTTERFLY AND AUTUMNAL AND/OR WINTERING ROOST SITES. (ULTIMATE TRAIL CONFIGURATION: SIGNIFICANT AND UNAVOIDABLE; OPTIONAL INTERIM TRAIL: SIGNIFICANT AND UNAVOIDABLE)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Proposed Project (Ultimate Trail) would have an adverse effect on monarch butterfly and its autumnal and/or winter roost habitat through habitat modification as a result of tree removal

during construction, as well as from trail operation (use) of Segment 9 of the Project corridor. The monarch butterfly is a candidate for listing under the FESA (USFWS 2020 and 2022e). On July 21, 2022 the International Union for Conservation of Nature (IUCN) listed the monarch as Endangered. Winter roost sites of the monarch butterfly are listed by NatureServe as imperiled/vulnerable (S2/S3) within California (CDFW CNDDB 2022). In the 1994 General Plan, the County of Santa Cruz recognizes as sensitive habitat "areas which provide habitat for species which meet the definition of Section 15380 of the CEQA guidelines"; the monarch butterfly meets this criteria. In the City of Santa Cruz General Plan the monarch butterfly is identified as a special-status species in Natural Resources and Conservation 2.4.1 and in Table 1, which lists avoidance and minimization measures (City of Santa Cruz 2012). The City of Santa Cruz also identifies the overwintering habitat of the monarch as a sensitive habitat area (Santa Cruz City 2012).

Construction

To accommodate Segment 9 of the Ultimate Trail Configuration and meet CPUC safety requirements and Caltrans Class 1 trail width requirements, tree removal would occur in known and potential monarch roost sites, as shown on **Figure 3.3-4a** and **3.3-4b** and listed in **Table 3.3-5** for each known or potential roost site. A total of 0.34 acres of known or potential roost sites would be impacted by tree removal. These sites vary in their suitability for autumnal and overwintering roosting monarchs. **Appendix E.4** provides a more detailed description of monarch roost habitat requirements. Tree removal would result in habitat modifications that would affect the suitability of autumnal and overwintering monarch roost sites.

Known and potential monarch roost habitat would be protected to the greatest extent feasible through trail design. Where sensitive resources exist, the trail has been designed to the minimum width requirements. Further, at Woods Lagoon west of the Santa Cruz Harbor and on the east side of the Santa Cruz Harbor, the trail was redesigned as a viaduct, whereby piles would be installed at intervals along the rail embankment (see Section 2.4.1). This design replaced an earlier at-grade trail design that required a retaining wall, which would have resulted in the removal of additional trees and greater impacts on roost habitat.

East of the San Lorenzo River, tree removal to accommodate the trail would impact potential monarch habitat (**Table 3.3-5**). This grove consists of an "L"-shaped band of trees that lack wind protection from prevailing and southerly winds. The trees have a tall narrow growth habit and lack the multi-tiered and spreading canopy that monarchs utilize to form clusters at overwintering sites.

Monarchs use this grove as an autumnal roost site when English ivy is in bloom. Because of the confined ROW and steep embankments along this stretch of the rail corridor, the Ultimate Trail Configuration has been designed to the minimum width to accommodate both rail and trail.

At Woods Creek, where the trail would be along a viaduct, tree removal (shown in **Table 3.3-5**) would result in impacts on known monarch roost habitat, specifically on buffer trees that maintain suitable habitat conditions at the roost site by sheltering the roost trees from prevailing and southerly winds. Twenty-six (26) buffer trees, including 13 Heritage trees would be removed. Tree removal at this location would result in habitat modifications that may affect the suitability of the monarch roost site.

The viaduct design at this location (rather than an at-grade trail with retaining wall) made it possible to protect in place several trees. In addition, there is adequate room in the rail ROW at this location, which widens at the approach to the Woods Lagoon Railroad Road Bridge spanning the harbor, to accommodate a monarch roost planting plan. This mitigation would reduce the impact; however, mitigation planting would not provide buffering characteristics for the grove for many years.

Table 3.3-5 Monarch Roost Sites, Proposed Tree Removal, and Acreage of Permanent Impacts for the Proposed Project

		Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)		Optional First Phase: Trail on the Rail Line (Interim Trail)[a] Part 1		Parts 1 + 3		
Location	**Known/ Potential**	**Tree Removal**	**Acres of Impact**	**Tree Removal**	**Acres of Impact**	**Tree Removal**	**Acres of Impact**	**Description**
Eucalyptus Grove east of the San Lorenzo River to Pilkington Creek	potential	51	0.23	6	0.09	57	0.26	This grove consists of a narrow "L"-shaped band of trees that provide marginal potential habitat for the overwintering monarch. The grove lacks wind protection from prevailing and southerly winds. In addition, the grove consists of tall narrow trees lacking the multi-tiered and spreading canopy that monarchs prefer.
Eucalyptus and Oak Trees at Woods Creek, west of Santa Cruz Harbor	known	26	0.05	9	0.01	31	0.06	The trees immediately adjacent (north) of the rail line consist of large eucalyptus trees and medium-sized oak trees that serve as buffer trees for the monarch roost trees just north in Woods Creek. Monarchs have been observed at this location during autumnal and winter roost season over multiple years, including during 2021 surveys (McGinty and Davilla 2022). This roost site is not identified on Xerces as it located on private property.
Eucalyptus Grove east side of the Santa Cruz Harbor to 6th Avenue	potential	37	0.07	22	0.08	37	0.15	This eucalyptus groves stretches along the east perimeter of the north Santa Cruz Harbor and to the east along the rail line, where the trees transition to oak trees at the corner of the PG&E yard. This grove possesses the characteristics necessary to support autumnal and winter roosting[26].
Eucalyptus Grove at Leona Creek	potential	0	0	3	0.04	3	0.04	This eucalyptus grove possesses suitable roost characteristics and is located nearby the known Twin Lakes State Beach (Lifeguard Headquarters) roost site (Xerces Site 3011).
Total		**114**	**0.35**	**40**	**0.22**	**128**	**0.51**	

[a] Part 1 is implementation of the Interim Trail, which includes removal of the rail track and ties and construction of the Interim Trail on the rail bed. Part 2 is demolition of the Interim Trail and rebuilding of the rail line. Part 3 is construction of the Ultimate Trail Configuration, which would be the same as described for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail.

[26] A key component of monarch habitat protection is recognizing that the butterfly responds to short-, medium-, and long-term changes in the weather, climate, and environment (including the changing structure of roost trees and availability of nectar plants) by selecting different roost sites under different conditions. A roost site that is not desirable one month or one year may prove to have the perfect habitat characteristics in subsequent months or years, while occupied roosts may senesce as the trees grows taller and looser their multi-tiered canopy.

Immediately east of the Santa Cruz Harbor, additional tree removal is required to accommodate the trail (**Table 3.3-5**). Similar to the west side of the harbor, the trail would be along a viaduct design (instead of at grade with a retaining wall) to minimize tree removal, which made it possible to protect in place several additional trees. Potential monarch habitat east of the harbor consists of a large eucalyptus grove that possesses sufficient wind protection and suitable canopy structure to support roosting monarchs.

No trees would be removed from the potential monarch roost habitat in the grove of eucalyptus trees south of the tracks at Leona Creek in the Twin Lakes State Beach open space.

In addition to tree removal, construction activities may result in disturbance, injury, or mortality to autumnal or winter roosting monarchs from noise, vibration, dust, vehicle strikes, damage to nectar plants, and/or loss or contamination of water sources. As described in Section 2.6.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, the Project includes several best construction best management practices (BMPs) to minimize construction impacts on biological resources, but additional mitigation is necessary to reduce this impact to a less than significant level.

Mitigation Measure BIO-2 requires construction awareness training and monitoring for sensitive wildlife species, including the monarch butterfly.

Mitigation Measure BIO-9a, which is identified for and described in detail under Impact BIO-9, would minimize construction activities in and adjacent to sensitive habitats, including monarch habitat, and requires all sensitive biological resources to be identified on project plans and protective construction fencing installed to minimize and prevent inadvertent disruption to the habitat.

Mitigation Measure BIO-9b, which is identified and described in detail under Impact BIO-9, includes a monarch roost site buffer planting plan. The planting plan would enhance the buffer quality of the embankment by planting native tree species and understory plants (for nectaring) and configuring the plantings to create a permeable tiered canopy which slopes down to the north (**Figures 3.3-4a** and **3.3-4b**).

Mitigation Measure BIO-9c, which is identified for and described in detail under Impact BIO-9, would further reduce impacts related to construction activities and timing through additional BMPs to protect the monarch butterfly and other sensitive species. Autumnal and winter roost habitat and individual butterflies would be protected to the extent feasible during construction by timing tree removal and other potentially disruptive construction activities to be performed outside the monarch roost season, minimizing impacts to sensitive habitats and implementing best management practices [minimization of the construction footprint, installation of silt fencing, and confining construction equipment, operations, staging, and access to designated areas, as described in Mitigation Measure BIO-9a, BIO-9c].

In addition, biological monitoring for sensitive wildlife species would be performed by an agency-approved biologist, as described below (Mitigation Measure BIO-2).

While the Project MMP would include provisions for the enhancement of monarch habitat, the permanent loss of mature monarch roost trees, including buffer trees, cannot be adequately mitigated. This is because enhancement plantings would take many years to fully mature and provide adequate buffer quality of and functions. In addition, mitigation sites for tree replacement planting are not readily available in locations that would benefit monarch roost habitat.

Therefore, this construction-related impact is **significant and unavoidable** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c).

Operation

Once constructed, use of the trail may result in impacts to autumnal or winter roosting monarchs through increased presence of pedestrians and cyclists on the trail which may directly impact individual monarchs through trampling or vehicle strikes and/or degradation of nectar and roost habitat. Autumnal and winter roost habitat and individual butterflies would be protected to the extent feasible during trail operation. As described in Section 2.4, the viaducts that extend near monarch butterfly habitat would have guardrails which would keep bicyclists and pedestrians on the trail. Additionally, there would be educational signage to inform trail users about the monarch butterfly, its habitat, and other important life history information.

However, additional measures identified for and described in detail under Mitigation Measure BIO-9b would be necessary to minimize operational impacts to individual monarch butterflies, roost habitat, and nectar habitat.

Mitigation Measure BIO-9b, which is described in detail under Impact BIO-9, outlines the development of a Project-specific Biological Resources Mitigation and Management Plan (MMP), which would mitigate temporary disturbance and permanent loss of sensitive habitats and mitigate impacts to other sensitive biological resources known to occur within the Project corridor. The MMP would describe provisions to protect and enhance the functions and values of sensitive habitat, including known and potential monarch roost and nectar habitat, and would identify enhancement plans for the wind buffer at Woods Creek.

Therefore, this impact from trail use would be **less than significant with mitigation** (Mitigation Measures BIO-9b).

In summary, the overall impact from construction and operation would be **significant and unavoidable** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

During construction of Segment 9, the City and/or County (depending on the implementing agency/jurisdiction) and the construction contractor shall conduct construction monitoring for sensitive wildlife species, as specified below:

- Prior to initiation of construction activities, a USFWS- and CDFW-approved biologist shall prepare a construction monitoring plan that identifies all areas to be protected with exclusion fencing on a 1:1500 scale map (or similar scale determined to be practicable), and all areas requiring monitoring by a USFWS-, NOAA Fisheries, and/or CDFW-approved biologist or trained construction monitor.
- Prior to initiation of construction activities, a USFWS-, NOAA Fisheries, and/or CDFW-approved biologist shall conduct an environmental training for all construction personnel. The training shall include a description of the sensitive wildlife species known or with potential to occur in the Project alignment and surroundings [monarch butterfly, sensitive fish species, western pond turtle, potential Santa Cruz black salamander, sensitive and native nesting bird species (including bald eagle and peregrine falcon), roosting bats species (including western red bat), San Francisco dusky-footed woodrat, and marine mammal species (including southern sea otter)].
- Prior to initiation of construction activities, the construction contractor shall install temporary exclusion fencing (solid silt fencing) in specified areas along the project boundaries, approximately 6 inches below grade and 3.0 feet above grade, with wooden stakes at intervals of not more than 8.0 feet. The fence shall be maintained in working order for the duration of construction activities. The USFWS-approved biologist or trained construction monitor shall

inspect the fence daily and notify the construction foreman when fence maintenance is required. The fence shall allow for wildlife passage across the alignment at intervals to be determined in conjunction with USFWS and CDFW.

- Construction activities shall be timed to minimize impacts to sensitive biological resources, as shown in **Table 3.3-7**.
- The agency-approved biologist shall be present on-site, to direct and inspect all ground disturbing activities (including but not limited to tree removal, vegetation removal, grading, grubbing, and exclusion fence installation and removal, and for construction activities located in or near sensitive wildlife resources). Any vegetation removed shall be placed directly into a disposal vehicle. Vegetation shall not be piled on the ground unless later transferred, piece by piece, under the direct supervision of an approved biologist.
- The approved biologist shall train a designated construction monitor who shall oversee implementation of all protective mitigation measures when the biologist is not present. This representative shall be trained in the identification of special-status wildlife. This representative shall not have the authority to handle special-status species.
- Once ground disturbance activities have been completed, the approved biologist or trained construction monitor shall conduct regular inspections of the work area. Prior to the start of work each day, the biologist or monitor shall check for wildlife underneath any vehicle or heavy equipment within the construction site.
- The biologist will remain on call. In the event that the construction monitor identifies a sensitive wildlife species in or near the Project area, the approved biologist will be available to confirm the identification and, depending on the species, and with agency authorization, relocate the animal out of harm's way. Suitable relocation sites shall be identified in advance with the approval of the relevant agencies.
- The approved biologist and construction monitor shall have the authority to stop work that may result in the "take" of a special-status species.
- At the end of each workday, excavations (i.e., trenches, holes) shall be secured with a cover (preferably) or a ramp to prevent wildlife entrapment.
- All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.
- With agency approval, the approved biologist shall remove invasive aquatic species such as bullfrogs and crayfish from suitable aquatic habitat in and near the construction impact area, if present.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Removing the rail and building the Interim Trail (Part 1 of the optional Interim Trail) could have an adverse effect on monarch butterfly and its autumnal and/or winter roost habitat through habitat modification as a result of tree removal, during construction, and/or during trail operation.

Construction

Constructing the Interim Trail would result in tree removal in potential monarch habitat but would reduce tree removal impacts at the known monarch roost site at Woods Creek (**Table 3.3-5**). Nine buffer trees, including one Heritage tree would be removed at this location for Part 1 of the optional Interim Trail.

Impacts during construction of Part 1 would be similar to those described above for the Ultimate Trail. Additionally, construction would include the removal of the tracks, which involves transporting the railroad ties (treated wood waste) off site for disposal, excavating and redistributing the ballast on site (where feasible), and regrading, compacting, and capping the rail bed with trail pavement. These additional activities are likely to generate increased and potentially more hazardous dust and vibrations than the construction of the Ultimate Trail alone.

Although the construction impacts would be temporarily greater, fewer trees would be removed resulting in fewer impacts on monarch roost habitat suitability during Part 1. Implementation of the same mitigation measures described above for the Ultimate Trail would reduce the impacts to a less than significant level. Therefore, this construction-related impact **would be less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c).

Operation

Operation of Part 1 of the Interim Trail would result in similar impacts to the operation of the Ultimate Trail. The increased presence of pedestrians and cyclists may directly impact individual monarchs through trampling or vehicle strikes and/or degradation of nectar and roost habitat.

Therefore, this impact from trail use would be **less than significant with mitigation** (Mitigation Measure BIO-9b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would not require additional tree removal that would impact monarch roosting habitat. Impacts during Part 2 would be associated with construction activities and would be similar to those described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail (Part 1). However, removal of the Interim Trail and reinstallation of the rail line is likely to generate significantly more dust and vibrations than the construction activities associated with the Ultimate Trail alone. There would be no operational impact associated with Part 2 because there would be no trail.

Although the construction impacts would be temporarily greater, no trees would be removed resulting in fewer impacts on monarch roost habitat during Part 2. Implementation of the same

mitigation measures described above for the Ultimate Trail would reduce the impacts to a less than significant level. Therefore, this construction-related impact **would be less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* for construction and operational impacts. Refer to the discussion for Impact BIO-2, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*.

These impacts would be **significant and unavoidable** (Mitigation Measure BIO-2, Bio-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effect of Interim Trail Parts 1, 2, and 3 would result in a greater number of trees being removed overall, resulting in greater impacts on monarch roost habitat and habitat suitability. Further, major construction activities would occur three times in the same location, albeit likely over a period of years. As described in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, for purposes of analysis, it is estimated that construction of Parts 1 and 2 could be 25 years apart, while construction of Parts 2 and 3 would likely be closer so users are not without the trail for a prolonged period of time. In order to prevent additional impacts to the monarch, whose disposition may change over the time period (i.e., this species is likely to be listed under the FESA), construction activities in known and potential monarch would occur outside the monarch roosting period and monarch roost habitat would be preserved to the greatest extent feasible. The impacts of the Optional Interim Trail as a whole would be **significant and unavoidable**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have a larger footprint and greater tree removal overall (**Table 3.3-8**) than the Project without the optional Interim Trail. In addition, the Proposed Project without the optional Interim Trail would subject monarch roost habitat to one set of construction activities, whereas the Project with the optional Interim Trail would affect monarch roost habitat over the course of three separate major construction periods. Thus, although it would be a significant and unavoidable impact under either scenario, the impact of the Proposed Project with the optional Interim Trail would be greater than without the Interim Trail.

Impact BIO-3 THE PROJECT COULD ADVERSELY AFFECT SENSITIVE FISH SPECIES (TIDEWATER GOBY, CENTRAL CALIFORNIA COAST COHO SALMON, AND CENTRAL CALIFORNIA COAST STEELHEAD), CRITICAL HABITAT, AND COHO ESSENTIAL FISH HABITAT (EFH). (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

The Proposed Project (Ultimate Trail) could have an adverse effect on tidewater goby, central California coast coho salmon, and central California coast steelhead as a result of trail construction activities, as well as trail operation (use), over and adjacent to drainages along Segment 9 of the Project corridor.

The tidewater goby is listed as Endangered under the FESA (USFWS 1994) and a Species of Special Concern by CDFW (Moyle et al. 2015, CDFW 2022d). Segment 9 begins on the eastern edge of the San Lorenzo River, where occurrence of tidewater goby is considered "intermittent" (USFWS 2005); the San Lorenzo River is not considered critical habitat for tidewater goby (USFWS 2013). The tidewater goby is present in Schwan Lagoon within the Twin Lakes State Beach open space (CDFW 2022f, g); this location is not within designated critical habitat for the tidewater goby (USFWS 2013).

The central California coast coho salmon is listed as Endangered under the FESA (NOAA Fisheries 2012) and Endangered under the CESA (CDFW 2022b). The San Lorenzo River and its riparian habitat are considered critical habitat for coho salmon (NOAA Fisheries 1999), which are known to occur in the San Lorenzo River (CalFish 2012; NOAA Fisheries 2016a, b, Spence 2016). Coho salmon Essential Fish Habitat (EFH) includes all water bodies currently or historically occupied and estuarine and marine areas to 200 nautical miles offshore (NOAA Fisheries 2012).

The central California coast steelhead is listed as Threatened under the FESA (NOAA Fisheries 2006). This species is known to occur in the San Lorenzo River (CalFish 2011), which is designated critical habitat (NOAA Fisheries 2005).

The Pacific lamprey is a CDFW Species of Special Concern (CDFW 2022d) and is known to occur in the San Lorenzo River watershed (Alley 2022).

Construction

No work would occur within the waters of the San Lorenzo River or on the embankments. Trail construction would occur above the break in bank on the east side of the San Lorenzo River Trestle Bridge. As described in Section 2.6 under *Best Management Practices,* erosion and sediment control measures would be installed and maintained during construction to reduce sediment, other materials, and chemical-laden runoff introductions to the river. These measures would avoid potential impacts to sensitive fish species and their critical habitat in the San Lorenzo River.

Coho and salmon occur only occasionally within the Santa Cruz Harbor. As described in Section 2.6 under *Best Management Practices*, a debris containment device would be installed under the

existing Woods Lagoon Railroad Bridge that crosses the harbor, and it would span several feet beyond the edge of the proposed cantilever to ensure construction debris and materials do not enter the Santa Cruz Harbor. The debris containment device would be secured to the existing railroad bridge, and would remain in place during all construction activities over the water. This device would protect other fish species known to occur within the harbor.

At Leona Creek and Stream 1545, viaduct trail designs would be implemented, whereby piers would be installed at intervals to support the trail, including 10 piles below the break in bank at Leona Creek and two piles within the wetted basin of Stream 1545. No work would occur below the ordinary high-water mark (OHWM) and dewatering would not be required. At these locations construction activities could result in the introduction of sediment, other materials, or chemicals to Schwan Lagoon, where tidewater goby are known to occur. As described in Section 2.6 under *Best Management Practices*, erosion and sediment control measures would be installed and maintained which would reduce the introduction of sediment, construction debris, and contaminants (e.g., fuel, hydraulic fluid, concrete) to the waterbodies.

Additionally, federal and state agencies that regulate sensitive fish species and work below the break in bank may require additional measures to protect sensitive fish species and critical habitat. As stated in Section 2.7, *Required Permits and Approvals*, the Project may require permits from USFWS/NOAA Fisheries and would require permits from CDFW. As part of this process, the City may request technical assistance from USFWS and NOAA Fisheries. Through the Lake and Streambed Alteration Agreement permitting process, CDFW may identify additional protective measures for sensitive fish species.

Operation

Additionally, trail operation could result in increased impacts to aquatic features and riparian habitats through an increase in human traffic and associated trampling, trash, and human/dog excrement and through potential increases in erosion and sedimentation.

In summary, the construction and operation impacts on sensitive fish species would be reduced to a less than significant level with implementation of Mitigation Measures BIO-2, BIO-9a, b, c and BIO-10a, b, which are identified and described in detail under Impacts BIO-2 above and BIO-9 and BIO-10 further below, for potential impacts to monarch butterfly, sensitive natural communities and aquatic features.

Mitigation Measure BIO-2 would reduce potential impacts on fish habitat through biological monitoring, including environmental training of construction personnel by an agency-approved biological monitor and regular inspections of the work area to ensure compliance with all protective measures and conditions.

Mitigation Measures BIO-9a and BIO-10 would minimize construction in sensitive and aquatic/riverine habitats, through minimizing the construction footprint (confining construction equipment, operations, staging, and access to designated areas) and the installation of temporary protective construction fencing. Mitigation Measure 9c outlines BMPs to further protect sensitive and aquatic habitats during construction, to protect water quality, prevent erosion and sedimentation, and protect fish habitat. This measure also identifies the preferred construction window (the dry season) for work in or near aquatic features which would minimize sediment-laden runoff into aquatic features.

Mitigation Measure BIO-9b outlines the development of a Project-specific Biological Resources Mitigation and Management Plan (MMP), which would mitigate temporary disturbance and

permanent loss of sensitive habitats and mitigate impacts to other sensitive biological resources, including provisions to protect and enhance the functions and values of riparian habitats adjacent to Leona Creek and Creek 1545.

Additionally, as described for Impact HYD-1 in Section 3.8, *Hydrology and Water Quality*, water quality would be protected through implementation of the BMPs to be included in the construction specifications and compliance with the NPDES-required SWPPP, City's Grading Ordinance, and County's grading regulations would reduce the risk of water degradation on and off site from soil erosion and other pollutants related to construction activities would not obstruct or conflict with the implementation of the Central Coast Basin Plan.

Mitigation Measure BIO-10b would compensate for any losses to wetlands and aquatic/riverine habitats through implementation of an aquatic habitat mitigation and monitoring plan, which would include creation, restoration, enhancement, and/or preservation of wetlands and aquatic/riverine habitats.

There would be no direct Project impacts to marine sources protected under the Monterey Bay National Marine Sanctuary. Potential indirect impacts would be avoided and minimized with implementation of the mitigation measures described above.

Therefore, the construction and operation impacts would be **less than significant with mitigation**. Mitigation Measures BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b are described in detail under Impacts BIO-9 and BIO-10, respectively.

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

During construction of Part 1 of the Interim Trail, impacts on fish habitat would be similar to those for the Ultimate Trail. However, during implementation of Part 1 of the Interim Trail, the removal of the tracks and ballast could result in the additional introduction of sediment, construction debris, and contaminants (e.g., fuel, hydraulic fluid, concrete) to the San Lorenzo River, Santa Cruz Harbor, Leona Creek, Stream 1545 and downstream Schwan Lagoon. Impacts associated with trail construction would be similar to those described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration).*

As described above under the Proposed Project, the construction and operation impacts on sensitive fish species would be reduced to a less than significant level with implementation of Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c and BIO-10a, which are identified and described in detail under Impacts BIO-2 above, and BIO-9 and BIO-10 further below, for potential impacts to monarch butterfly, sensitive natural communities and aquatic features.

For Part 1 of the Interim Trail, no work would occur below the break in bank or below the Ordinary High-Water Mark of Leona Creek or Stream 1545.

Therefore, the construction and operation impacts would be **less than significant with mitigation**. Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, and BIO-10a are described in detail under Impacts BIO-2, BIO-9 and BIO-10, respectively.

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

2) Demolition of the Interim Trail and Rebuilding the Rail Line

As described above under Part 1 of the Interim Trail, Implementation of Part 2 of the Interim Trail (demolition of the Interim Trail) could also result in the introduction of hazardous materials and sediment into the aquatic features along the corridor. During implementation of Part 2, the removal of the trail could result in the additional introduction of sediment, construction debris, or other contaminants to the San Lorenzo River, Santa Cruz Harbor, Leona Creek, Stream 1545 and downstream Schwan Lagoon.

The impacts on sensitive fish species associated with Part 2 would be reduced to a less than significant level with implementation of Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, and BIO-10a, which are identified and described in detail under Impacts BIO-2, above, BIO-9 and BIO-10 further below, for potential impacts to monarch butterfly, sensitive natural communities and aquatic features. These mitigation measures would include biological monitoring during construction, the protection of sensitive habitats during construction, BMPs to protect water quality and prevent erosion and sedimentation and scheduling construction in or adjacent to aquatic features to occur during the dry season (June 1 – October 15). In addition, Mitigation Measure BIO 9b incorporates the protection of sensitive habitats in the Project MMP.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration, constructed as Part 3 of the optional Interim Trail, would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* for construction and operational impacts. Refer to the discussion for Impact BIO-3, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*.

These impacts would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Combined Effect of Interim Trail Parts 1, 2, 3

Although over an extended period of time, the combined effect of Parts 1, 2, and 3 of the Interim Trail is that significant construction activities would be performed three times adjacent to the San Lorenzo River, over the Santa Cruz Harbor, and within/near Leona Creek and Stream 1545, as described above. Together Parts 1, 2, and 3 could result in the additional introduction of sediment, construction debris, or other contaminants materials to aquatic features along the rail corridor.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project without the optional Interim Trail would subject the aquatic features of the Project corridor to one set of construction-related impacts, whereas the Project with the optional Interim Trail would affect these waterbodies over the course of three separate major construction periods. Further, construction of Part 1 involves railbed disturbance which increases the risk of hazardous materials contamination. The impacts would be **less than significant with mitigation.**

Impact BIO-4 THE PROJECT COULD ADVERSELY AFFECT WESTERN POND TURTLE AND SANTA CRUZ BLACK SALAMANDER, IF PRESENT. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Proposed Project (Ultimate Trail) could have an adverse effect on the western pond turtle and, if present, on the Santa Cruz black salamander from trail construction and operation along Segment 9 of the Project corridor.

WESTERN POND TURTLE

The western pond turtle is a CDFW Species of Special Concern (CDFW 2022d, Thompson et al. 2016). The western pond turtle is known to occur at Schwan Lagoon within the Twin Lakes State Beach open space and within Neary Lagoon, near the western terminus of the Project corridor (CDFW

2022f, g). Leona Creek and Stream 1545, both tributaries to Schwan Lagoon, provide potential habitat for the turtle, including potential nesting habitat.

SANTA CRUZ BLACK SALAMANDER

The Santa Cruz black salamander is a CDFW Species of Special Concern (CDFW 2022d, Thompson et al. 2016). This species may occur in or near the Project corridor in the moist habitats of Pilkington Creek, Leona Creek, or Stream 1545. The Santa Cruz black salamander is known to occur from Pogonip Park and the University of California Santa Cruz quarry, approximately 2 miles from the western terminus of the Project corridor (CDFW 2022f, g). The Santa Cruz black salamander may occur along the drainages adjacent to the Project corridor.

Construction

Construction activities could result in temporary impacts on potential habitat western pond turtle and for Santa Cruz black salamander in Pilkington Creek, Leona Creek, and/or Stream 1545, in adjacent moist uplands and in potential western pond turtle nesting habitat. Construction activities could degrade potential habitat for these species through erosion, sedimentation, increased turbidity, or the discharge of toxic substances into aquatic features.

Construction equipment, grading, earth moving, trail construction, slope stabilization, and drainage improvements could cause injury or mortality to the western pond turtle, and Santa Cruz black salamander, if present.

During construction, erosion and sediment control measures would be installed and maintained which would reduce the introduction of sediment, construction debris, and contaminants (e.g., fuel, hydraulic fluid, concrete) to the waterbodies. These measures would reduce potential impacts to potential special-status amphibian and reptiles.

Implementation of Mitigation Measures BIO-2, BIO-9a, b, c and BIO-10a, b would protect potential habitat for black salamander and western pond turtle to the extent feasible and minimize incidental take during construction activities, as described above for other species under Impacts BIO-2 and BIO-3. Mitigation Measure BIO 2 is described in detail under Impact BIO-2. Mitigation Measures BIO-9a, BIO-9b, BIO-9c, and BIO-10a and BIO-10b are described under Impacts BIO-8 and BIO-9, respectively.

Therefore, this impact of the Proposed Project would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Operation

Trail operation could result in increased impacts to aquatic features and riparian habitats that provide potential habitat for western pond turtle and Santa Cruz black salamander (Pilkington Creek, Leona Creek, and/or Stream 1545) through an increase in human traffic and associated trampling, erosion, trash, and human/dog excrement.

Implementation of Mitigation Measures BIO-9b, and BIO-10b would protect potential habitat for black salamander and western pond turtle through the establishment of MMPs that include components to protect and enhance sensitive and aquatic habitats. Mitigation Measures BIO-9b and BIO-10b are described under Impacts BIO-9 and BIO-10, respectively.

Therefore, this impact of the Proposed Project would be **less than significant with mitigation** (BIO-9b and BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

During implementation of Part 1 of the optional Interim Trail, construction activities could introduce sediment, other materials, or chemicals to Pilkington Creek, Leona Creek and Stream 1545, which provide potential habitat for western pond turtle and Santa Cruz black salamander. Trail use would increase human traffic near these waterways which could result in increased trampling and erosion, and the increased deposition of trash and human/dog excrement into the habitat. The construction and operation impacts would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration).* The risk of construction-related contamination would be less because no work would occur below the break in bank or below the Ordinary High-Water Mark of Pilkington Creek, Leona Creek or Stream 1545; however, the removal of the tracks and ballast and would generate increased and potentially more hazardous materials that could enter the waterways through runoff. The risk of operation-related contamination would be the same as what is described above under the Proposed Project.

The mitigation measures listed above under the Proposed Project would reduce potential impacts. Therefore, this impact of the Proposed Project would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for monarch butterfly and other Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Implementation of Part 2 of the Interim Trail (demolition of the Interim Trail and rebuilding the rail line) would have similar construction-related effects on Santa Cruz black salamander and western pond turtle as described above for optional Interim Trail (Part 1), because construction activities could introduce contaminants and sediment into Pilkington Creek, Leona Creek and Stream 1545, which provides potential habitat for these species. However, there would be no operational impact associated with Part 2 because there would be no trail. As noted above, measures to protect waterbodies would be employed.

The mitigation measures listed above under the Proposed Project would reduce potential impacts. Therefore, this impact of the Proposed Project would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

3) Construction of the Ultimate Trail Configuration

Construction and operation impacts of the Ultimate Trail Configuration, constructed as Part 3 of the optional Interim Trail, would be similar to that described above for the *Proposed Project: Trail nest to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact BIO-4, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*.

These impacts would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Combined Effect of Interim Trail Parts 1, 2, 3

Although over an extended period of time, the combined effect of Parts 1, 2, and 3 of the Interim Trail is that significant construction activities would be performed three times within/near Pilkington Creek, Leona Creek and Stream 1545 as described above. Overall, the combined Optional Interim Trail would result in increased tree removal which would result in increased habitat modification near the creeks. Combined, the Optional Interim Trail is more likely to result in disturbance of the western pond turtle and potential Santa Cruz black salamander, which is a shy species. The impacts would be **less than significant with mitigation.**

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would result in greater impacts than the Proposed Project without the Interim Trail because the Optional Interim Trail would affect these waterbodies over the course of three separate major construction periods (instead of one construction period) and thus result in increased habitat modification and disturbance. The impacts would be **less than significant with mitigation.**

Impact BIO-5 THE PROJECT WOULD ADVERSELY AFFECT SENSITIVE AND NATIVE NESTING BIRD SPECIES DURING CONSTRUCTION AND OPERATION. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Project construction activities and trail operation along Segment 9 of the Project corridor could adversely affect nesting olive-sided flycatcher, oak titmouse, peregrine falcon, bald eagle, and other potential sensitive and native nesting bird species.

The bald eagle is listed as Endangered under the CESA, is a CDFW Fully Protected species, and is a USFWS Bird of Conservation Concern (USFWS 2008). The American peregrine falcon is Fully Protected by the CDFW (CDFW 2022e) and USFWS Bird of Conservation Concern. These species are known to breed adjacent to the Project corridor and were observed during the 2021 and 2022 surveys. A pair of peregrines is known to nest on the mudstone cliffs downstream of the San Lorenzo River Trestle Bridge, and nesting bald eagles are utilizing the Twin Lakes State Beach open space adjacent to the rail corridor.

The following native nesting birds are CDFW Species of Special Concern (Shuford et al. 2008, CDFW 2022d): Vaux's swift, olive-sided flycatcher, and oak titmouse. The olive-sided flycatcher and oak titmouse are also USFWS Birds of Conservation Concern (USFWS 2008). The white-tailed kite is listed as Fully Protected by the CDFW (CDFW 2022e). These bird species may utilize the habitats along and around the Project corridor for nesting activities.

During the 2021 and 2022 field surveys, numerous native bird species were observed in the habitats within and adjacent to the Project corridor (**Appendix E.5**). Pacific slope flycatcher, bushtits, and

Bewick's wrens were engaged in breeding activities along the alignment. The field surveys did not include a focused breeding bird survey because nest sites for most avian species are dynamic and nest locations vary from year to year. With the exception of those birds identified as wintering species, the birds listed in **Appendix E.5**, as well as other native birds, are expected to breed within and near the trail alignments. The CFGC protects the active nests and eggs of birds from take, possession, or needless destruction (3503), and prohibits the take, possession, or destruction of birds of prey (orders Falcinoformes and Strigiformes) and their eggs and nests (3503.5).

Construction

Project construction activities during the avian breeding season (from February 1 to September 1) may disrupt breeding activities, cause nest abandonment or failure, or directly harm or cause mortality to nesting birds, eggs, and young located within the Project corridor and surrounding area. The Proposed Project (Ultimate Trail Configuration) would result in the permanent displacement of 1.94 acres of potential nesting habitat for birds (refer to **Table 3.3-2** and **Table 3.3-6**). Construction of the Ultimate Trail requires removal of 381 trees (**Table 3.3-8**). Tree removal would occur in coast live oak woodland, arroyo willow and mixed riparian, and non-native forest habitats.

As described in Section 2.6.1, to the extent feasible, tree removal activities would be performed between September 1 and January 31 (ideally between September 1 and October 15), outside the breeding bird window, (see also **Table 3.3-7**). As stated in Section 2.7, *Required Permits and Approvals*, the Project would require permits from CDFW. As part of this process, CDFW may identify additional protective measures for native breeding birds.

Other construction activities, such as understory vegetation removal, grubbing and grading may also directly impact nesting birds that utilize the understory, embankments, or ground for nesting. Noise-producing activities, such as the operation of large equipment, may disrupt nesting birds adjacent to the work area.

The construction-related impacts on sensitive and native nesting birds would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-5, BIO-9a, BIO-9c).

Mitigation Measure BIO-2, which is identified and described in detail under Impact BIO-2, requires environmental training for construction personnel and biological monitoring by an agency-approved biologist for sensitive wildlife species, including sensitive and common nesting birds.

Mitigation Measure BIO-5, which is described in detail below, requires bird surveys and protective buffers for active breeding sites, if trees cannot be removed between September 1 and January 31.

Mitigation Measure BIO-9a, which is identified for and described in detail under Impact BIO-9, would minimize construction activities in and adjacent to sensitive habitats, which provide breeding habitat for birds. In addition, BIO-9a requires that all sensitive biological resources would be identified on project plans and temporary protective construction fencing would be installed to minimize and prevent inadvertent disruption of the habitat. As a result, impacts on breeding birds would be minimized.

Mitigation Measure BIO-9c, which is identified for and described in detail under Impact BIO-9, would further reduce impacts related to construction activities and timing through additional BMPs to protect sensitive habitats, nesting birds and other sensitive species.

Operation

Trail use may generally degrade nesting bird habitat through trampling and erosion, and the potential increase in trash and human/dog excrement deposition in and near the Project corridor. Trail use may also deter and disrupt nesting avian species that currently utilize the habitats associated with the rail cuts and embankments, including mature vegetation with multi-tiered canopy and cover, along the Project corridor. This operation impact would be **less than significant with mitigation** (Mitigation Measure BIO-9b).

Mitigation Measure BIO-9b would incorporate breeding bird habitat into the Project-specific Biological Resources MMP. This includes mitigating for the loss of trees along the alignment.

In summary, therefore, the potential construction and operation impacts to sensitive and native nesting birds would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-5, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO 5: Conduct Breeding Bird Surveys and Identify Protective Buffers prior to Construction, if Construction occurs between February 1 and August 31.

During construction of Segment 9, the City and/or County (depending on the implementing agency/jurisdiction) and the construction contractor shall implement the following measures:

- The avian breeding season occurs from February 1 through August 31 with a peak in breeding/nesting activity between April and June for most raptors and/or other birds.
- If feasible, Project activities will be initiated outside the breeding season in order to avoid impacts to breeding birds. Should Project activities be initiated between September and February, no avian breeding surveys would be required.
- If Project activities are to be initiated during breeding season, or if Project activities lapse for 1 week or more during breeding bird season, prior to construction/resumption of construction activities, an approved biologist will conduct avian breeding surveys for all birds (and their nests) protected under the MBTA. According to current CDFW permit conditions, the survey area will encompass tree stands and structures within the Project corridor and the following buffers (where accessible):
    - 250 feet for passerines/non-raptors;
    - 500 feet for small raptors such as accipiters; and
    - 1,000 feet for larger raptors such as buteos.

    Surveys will be conducted within 1 week (per current CDFW permit conditions), prior to beginning/resuming Project activities including, but not limited to, staging equipment, tree removal, vegetation clearing, and/or ground disturbing activities.
- In the event nesting bird species are observed, postpone Project activities until a qualified biologist has determined young birds have fledged or implement buffers appropriate to the construction activity and the species, such as those recommended in PG&E's Nesting Bird Management Plan (PG&E et al. 2015)[27]:

[27] PG&E's Nesting Bird Management Plan (2015) was based on a literature review of the effects of nest disturbance on reproductive success and consultation with subject experts and takes into account the nesting habits of the bird and the bird's sensitivity to disturbance, as well as the type of activity, duration, and noise level of disturbance (including direct and indirect effects), to develop disturbance categories (low, medium, or high) and associated buffers.

- Raptors (platform nesting): 300 feet (90 meters)
- Cavity-nesters (depending on species): 50 feet (15 meters)
- Bridge/building, tree, and ground/understory nesters: 75 feet (23 meters)

- Sensitive bird species, if nesting in or near the Project corridor, will be given special consideration and may require additional protective measures as determined through consultation with the relevant agency (USFWS or CDFW). The standard protective buffers recommended in PG&E et al. (2015) for sensitive birds that are known to nest in or near the corridor are as follows:

  - Bald eagle – *consultation required* [standard buffer: 1320 feet (402 meters)]
  - Peregrine falcon – *consultation required* [standard buffer: 500 feet (152 meters)]
  - Olive-sided flycatcher – standard buffer: 75 feet (23 meters)
  - Oak titmouse – standard buffer: 50 feet (15 meters)

  Other sensitive bird species have the potential to nest in or near the Project corridor.

- Protective buffers will be clearly marked for avoidance by construction activities.
- The approved biologist will document pre-construction baseline monitoring of the nest to characterize "normal" behavior. If approved by the agencies, the biologist may have the discretion to reduce the buffer and monitor the nest for disturbance. If the birds show signs of abnormal behaviors (e.g., defensive flights/vocalizations, standing up from brooding, and flying away from the nest) that are associated with construction activity, the biologist will reinstate the larger buffer. Work within the setback will be delayed until after the young have fledged.
- The biologist will have the authority to stop work if breeding birds exhibit behaviors that may cause nest failure.
- If postponing Project activities and/or installing buffers are not feasible, further discussions with the appropriate resource agencies (USFWS and/or CDFW) will be necessary to develop alternative requirements.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

For Part 1 of the Interim Trail, impacts on sensitive and native nesting bird species would be similar to the Ultimate Trail, including direct and indirect disturbance of nesting birds from construction activities such as tree and vegetation removal, grubbing and grading, and operation of large equipment. These impacts are described in greater detail above. Tree removal associated with Part 1 of the Interim Trail would result in the removal of 124 trees and the permanent loss of 0.8 acres of trees, including coast live oak woodland, arroyo willow and mixed riparian, and non-native forest.

Impacts on sensitive and native nesting birds as a result of trail use for Part 1 of the Interim Trail would be essentially the same as for the Ultimate Trail. Trail use may deter and disrupt nesting avian

species that currently utilize the habitats associated with the rail cuts and embankments, including mature vegetation with multi-tiered canopy and cover, along the Project corridor.

Mitigation for construction and operation impacts would be the same for Part 1 as for the Ultimate Trail and is described in detail above.

In summary, therefore, the potential construction and operation impacts to sensitive and native nesting birds would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-5, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO 5: Conduct Breeding Bird Surveys and Identify Protective Buffers prior to Construction, if Construction occurs between February 1 and August 31.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Part 2 of the Interim Trail would not result in additional tree removal; however, the operation of large noise-producing equipment could disrupt nesting activities as described in detail above under the Ultimate Trail. No operational impacts would result form Part 2 of the Interim Trail. Mitigation for Part 2 would be the same as for the Ultimate Trail and is described above.

Therefore, the potential construction and operation impacts to sensitive and native nesting birds would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-5, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO 5: Conduct Breeding Bird Surveys and Identify Protective Buffers prior to Construction, if Construction occurs between February 1 and August 31.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

3) Construction of the Ultimate Trail Configuration

For Part 3 of the Interim Trail, an additional 280 trees and 1.57 acres of breeding bird habitat would be permanently displaced, including coast live oak woodland, riparian, and non-native forest habitats.

Impacts associated with construction activities would be the same as the Ultimate Trail, as described above, including direct and indirect disturbance of nesting birds from construction activities such as tree and vegetation removal, grubbing and grading, and operation of large equipment.

Impacts associated with trail use during Part 3 of the Interim Trail would be the same as for the Ultimate Trail, as described above, although the disturbance footprint would be larger. Operational impacts include general degradation of nesting bird habitat and disturbance to nesting birds that utilize the habitats along the rail corridor. Mitigation for construction and operation of Part 3 of the Interim Trail would be the same as for the Ultimate Trail and are described in detail above.

Therefore, the potential construction and operation impacts to sensitive and native nesting birds would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-5, BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO 5: Conduct Breeding Bird Surveys and Identify Protective Buffers prior to Construction, if Construction occurs between February 1 and August 31.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

Impacts associated with construction of Parts 1, 2 and 3 of the Interim Trail would be similar to those described above under the Proposed Project; however, multiple stages of construction activities (tree removal, large equipment and noise-producing activities and the associated disruption of breeding birds) would occur over an anticipated period of 25 years. Ongoing disturbance associated with the additional construction periods may deter shyer bird species from nesting near the Project corridor. The combined effect of the Interim Trail includes tree removal associated with Parts 1 and 3 for a total of 404 trees; 2.37 acres of breeding bird habitat would be permanently displaced. Operational impacts from Parts 1, 2, and 3 would generally degrade breeding bird habitat in or near the corridor and disrupt breeding bird activities. These impacts would be similar to the Proposed Project and are described above, although the footprint would be larger overall. The impacts would be **less than significant with mitigation.**

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would result in greater impacts to nesting birds than the Proposed Project alone. The Optional Interim Trail would impact an additional 0.43 acres of breeding bird habitat (2.37 acres overall compared to 1.94 acres for the Ultimate Trail alone), as well as an additional 23 trees (404 trees instead of 381 trees), due to the larger overall footprint resulting from the Optional Interim Trail Part 1 footprint combined with the Ultimate Trail footprint. Construction would occur in multiple stages (albeit over a period of years), resulting in repeated disturbance and disruption of breeding birds. Ongoing disturbance of this nature may deter birds

that are more sensitive to disturbance from nesting in the area. Operation impacts associated with the Proposed Project and the Optional Interim Trail would be similar, with the footprint of the Optional Interim Trail being larger overall. The impact of the Proposed Project would be **less than significant with mitigation** with or without the optional Interim Trail.

Impact BIO-6 PROJECT CONSTRUCTION COULD ADVERSELY AFFECT SENSITIVE AND COMMON ROOSTING BAT SPECIES THAT MAY USE COAST LIVE OAK WOODLAND AND OTHER TREES ALONG THE ALIGNMENT. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Project construction activities could adversely affect sensitive bat species that may use trees in the coast live oak woodland and riparian forest located within and adjacent to Segment 9 of the Project corridor, particularly within the Twin Lakes State Beach open space. There would be no operational impacts to bats from trail use.

The western red bat (*Lasiurus blossevillii*) and the long-legged myotis (*Myotis Volans*) are listed as High Priority by the Western Bat Working Group (2017). The western bat is also a CDFW Species of Special Concern (Bolster 1998, CDFW 2022d). The western red bat was detected in the tree canopy of the mature riparian forest along Leona Creek. The western red bat roosts in foliage, often in riparian habitats. The common hoary bat (*Lasiurus cinereus*), another foliage-roosting bat species, may also be present. Coast live oak woodland and forest habitats along the Project corridor provide potential habitat for long-legged myotis (Heady 2018).

Common bat species, such as California myotis, Yuma myotis and big brown bat may occur in the oak and riparian habitats. The CFGC protects non-listed bat species and their roosting habitat, including individual roosts and maternity colonies. These include CFGC Section 86; 2000; 2014; 3007; 4150, along with several sections under Title 14 of California Code of Regulations.

Project construction would require extensive removal of mature coast live oak trees along the Twin Lakes State Beach open space and may require the removal of mature riparian vegetation along Leona Creek and Stream 1545. These activities would result in the destruction and degradation of bat roost habitat and may result in impacts on maternity roosts and/or winter hibernacula, if present, and/or the injury or mortality individual sensitive or common bat species that may roost in these habitats. The Ultimate Trail would require the permanent removal of 381 trees totaling 1.94 acres.

As described in Section 2.6.1, tree removal activities would be best performed between September 1 and January 31 (ideally between September 1 and November 1), outside the bat maternity roosting season (from May 1 to August 31) and typical winter hibernacula (from November 1 to February 15), to the extent feasible (**Table 3.3-7**). These dates conflict with the preferred window for tree removal in monarch habitat but are otherwise consistent with the preferred construction windows identified in Mitigation Measure BIO-9c.

Implementation of Mitigation Measures BIO-2, BIO-6, and BIO-9c would protect potential roosting bat species from construction-related impacts. Mitigation Measure BIO 2, which is identified and described in detail under Impact BIO-2, requires environmental training for construction personnel and biological monitoring by an agency-approved biologist for sensitive wildlife species, including sensitive and common roosting bats.

Mitigation Measure BIO-6, which is described in detail below, requires bat surveys and protective measures for bat maternity roosts and roosting bats.

Mitigation Measure BIO-9a, which is identified for and described in detail under Impact BIO-9, would minimize construction activities in and adjacent to sensitive habitats, which provide roosting habitat for bats. In addition, BIO-9a requires that all sensitive biological resources would be identified on project plans and temporary protective construction fencing would be installed to minimize and prevent inadvertent disruption of the habitat. As a result, impacts on roosting bats would be minimized.

Mitigation Measure BIO-9c, which is identified for and described in detail under Impact BIO-9, would further reduce impacts related to construction activities and timing through additional BMPs to protect sensitive habitats which bats use for roosting.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-6, BIO-9a, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-6: Conduct Bat Surveys and Implement Measures to Protect Roosting Bats during Construction

In Segment 9, the City and/or County (depending on the implementing agency/jurisdiction) and the construction contractor shall implement the following measures. To avoid impacts to individual roosts, winter hibernacula, and maternity roosts, during all months, throughout the Segment 9 corridor and especially in mature coast live oak woodland and riparian habitats, prior to limbing/tree removal, an approved biologist shall conduct a pre-construction survey for bats to determine if cavity, crevice or foliage-roosting bats are present, as follows:

- Bat maternity roosting occurs typically between May 1 and August 31, and winter hibernacula (shelter occupied during the winter by a dormant animal) for many bat species are found between November 1 and February 15.
- All trees and limbs proposed for removal, topping or pruning should be marked in the field by the Project proponent in advance of the Project start date.
- A qualified biologist shall determine if bats are utilizing the Project corridor for roosting. For any trees/snags/structures (bridges) that could provide roosting habitat for cavity, crevice, or foliage-roosting bats, potential bat roost features shall be thoroughly evaluated to determine if bats are present. Visual inspection, emergence, and/or acoustic surveys shall be utilized as initial techniques.
    - □ If established maternity colonies are found, in coordination with CDFW, a buffer shall be established around the colony to protect pre-volant young from construction disturbances until the young can fly; or implement other measures acceptable to CDFW.
    - □ If individual roosting bats or winter hibernacula are found, in consultation with CDFW or based on CDFW recommendations, the qualified biologist shall develop and implement acceptable passive exclusion methods. If feasible, exclusion shall take place during the appropriate windows (between September 1 and November 1) (Authorization from CDFW is required to evict winter hibernacula for bats).
- If a tree is determined not to be an active roost site for cavity-roosting bats, it may be immediately limbed or removed as follows:
    - □ If foliage-roosting bats are determined to be present, limbs shall be lowered, inspected for bats by a bat biologist, and chipped immediately or moved to a dump site. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or

moved to a dump site. No logs or tree sections shall be dropped on downed limbs or limb piles that have not been in place since the previous day.

- □ If the tree is not limbed or removed within 4 days of the survey, the survey efforts shall be repeated.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Impacts to sensitive and common roosting bat species associated with Part 1 of the Optional Interim Trail would be similar to the Ultimate Trail, whereby tree removal could result in disruption and/or direct injury or mortality of maternity roosts, winter hibernacula and/or individual roosting bats. Operation of large noise-producing equipment could also disrupt maternity roosts, if present, near the Project corridor. Part 1 of the Interim Trail would permanently displace 0.8 acres of trees (124 trees) that provide potential bat roost habitat.

Mitigation for Part 1 of the Optional Interim Trail would be the same as for the Ultimate Trail and would include implementing protective measures during construction as described above.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-6, BIO-9a, c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-6: Conduct Bat Surveys and Implement Measures to Protect Roosting Bats during Construction

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Part 2 of the Interim Trail would not result in additional tree removal; therefore, no injury or mortality of bats as a result of tree removal would occur. Construction activities associated with Part 2, including the operation of large noise-producing equipment, could degrade bat roost habitat adjacent to the Interim Trail and disrupt maternity roosts, if present near the corridor. Mitigation for Part 2 of the Interim Trail would include (but is not limited to) protective measures to ensure bat maternity roosts are not harmed, minimizing the construction footprint and implementation of BMPs during construction to further protect sensitive habitats that support roosting bats.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-6, BIO-9a, b, c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-6: Conduct Bat Surveys and Implement Measures to Protect Roosting Bats during Construction

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

3) Construction of the Ultimate Trail Configuration

For Part 3 of the Interim Trail, 280 trees (1.57 acres) would be permanently displaced, including coast live oak woodland, riparian, and non-native forest habitats. These habitats could support bat maternity roosts, winter hibernacula, or individual roosting bats. Tree removal could cause injury or mortality of roosting bats. In addition, noise-producing equipment could disrupt bat maternity roosts, if present near the Project corridor. These construction-related impacts would be similar to those described in greater detail above for the Ultimate Trail. Mitigation for Part 3 of the Interim Trail would be the same as for the Ultimate Trail, as outlined above.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-6, BIO-9a, c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-6: Conduct Bat Surveys and Implement Measures to Protect Roosting Bats during Construction

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of Parts 1, 2, and 3 includes tree removal associated with Parts 1 and 3 as well the effects of multiple stages of construction. A total of 404 trees and 2.37 acres of potential roosting bat habitat would be permanently displaced, including coast live oak woodland, riparian, and non-native forest habitats. Impacts associated with construction activities would be the same as the Ultimate Trail, as described above, including both direct and indirect disturbance of roosting bats from construction activities such as tree removal and operation of large equipment. For the combined effect of the Interim Trail, however, construction would occur three times over a span of an estimated 25 years, resulting in greater impacts. Mitigation for construction and operation of Part 3 of the Interim Trail would be the same as for the Ultimate Trail and are described in detail above.

Therefore, this impact would be **less than significant with mitigation**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would result in greater impacts to bat roost habitat than the Proposed Project without the optional Interim Trail. The Optional Interim Trail would impact an additional 0.43 acres of potential roosting bat habitat (2.37 acres overall compared to 1.94 acres for the Ultimate Trail alone) due to the larger overall footprint resulting from the Optional Interim Trail Part 1 footprint combined with the Ultimate Trail footprint. Construction

would occur in multiple stages (albeit over a period of years), resulting in repeated disturbance and disruption of roosting bats. The impact of the Proposed Project would be **less than significant with mitigation** with or without the optional Interim Trail.

Impact BIO-7 The Project would adversely affect San Francisco Dusky-footed woodrat. (Ultimate Trail Configuration: Less than Significant with Mitigation; Optional Interim Trail: Less than Significant with Mitigation)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Project construction activities along Segment 9 of the Project corridor would adversely affect the San Francisco dusky-footed woodrat through habitat modification and direct impacts to woodrat houses. Impacts from operation (trail use) could occur from degradation of and encroachment into sensitive habitats adjacent to the Project corridor.

The San Francisco dusky-footed woodrat is known to occur at the interface between natural and developed habitat types and is primarily nocturnal. The San Francisco dusky-footed woodrat is a CDFW Species of Special Concern (Bolster 1998, CDFW 2022d). During the 2021 and 2022 field surveys, numerous woodrat houses were observed on the ground and in the trees within coast live oak forest, riparian, and non-native forest habitats along Segment 9 of the Project corridor (**Figure 3.3-4b**).

The Proposed Project (Ultimate Trail Configuration) would result in the permanent loss of 1.94 acres of San Francisco dusky-footed woodrat habitat through tree removal. Construction activities would temporarily impact an additional 2.45 acres. Loss of potential woodrat habitat is calculated based on occupied habitats identified during surveys, including riparian habitat, coast live oak woodland, and non-native forest (in some locations). Woodrats establish their houses where food sources are abundant and the right conditions of cover, shelter, shade and sun are present. Tree removal, vegetation removal, grubbing, grading could directly impact woodrat houses and degrade woodrat habitat. Noise-producing activities in proximity to woodrat houses could disrupt woodrats and their young.

Potential impacts could be reduced to a less than significant level with mitigation.

Mitigation Measure BIO-7, described below, would protect San Francisco dusky-footed woodrat houses from construction-related impacts and/or provide for relocation. Mitigation Measure BIO-2, described under Impact BIO-2, and Mitigation Measures BIO-9a and BIO-9c, described under Impact BIO-9, would provide further protection by minimizing construction-related impacts in the habitats that support woodrat and through implementing BMPs.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-7, BIO-9a, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-7: Implement Dusky-Footed Woodrat Protection Measures During Construction

During construction of Segment 9, the City and/or County (depending on the implementing agency/jurisdiction) and the construction contractor shall implement the following measures. Prior to construction, a qualified biologist shall conduct a pre-construction survey for woodrat houses, and clearly flag all houses within the construction impact area and immediate surroundings.

The construction contractor shall avoid woodrat houses to the extent feasible by installing a minimum 10-foot (preferably 25-foot) buffer with silt fencing or other material that shall prohibit

encroachment. If this buffer and avoidance is not feasible, the qualified biologist shall allow encroachment into the buffer, but preserve microhabitat conditions such as shade, cover and adjacent food sources.

Additionally, if avoidance is not possible, a qualified biologist shall develop and implement a Woodrat Relocation Plan, in consultation with CDFW, that allows for the relocation of woodrats and their houses. The plan shall include the following (or similar and CDFW-approved) criteria:

- Relocation will occur when vulnerable young are least likely to be present in the woodrat houses (ideally between August 1 and October 30).
- During dismantling of woodrat houses, woody debris, food caches, and nesting materials will be retained and relocated to reconstructed or artificial shelters.
- Relocation sites will be in the nearest suitable habitat outside the Project footprint.
- Sites for artificial shelters shall be located in proximity to the original house location and no closer than 20 feet from existing woodrat houses and other artificial shelters. Choose the best available microhabitat, ideally in a location with sun and shade and, if possible, under the same species of tree or shrub as was present at the original house location. Relocation sites shall contain biologically suitable habitat features (e.g., stands of poison oak, coast live oaks, and dense native brush).
- Monitoring shall be conducted for 30 days after relocation is completed and include infrared and motion activated cameras and an occupancy assessment.
- A report on San Francisco dusky-footed woodrat house monitoring shall be provided to CDFW, within 30 days following the end of the monitoring period and shall include the methods and results of relocation, occupancy determinations, and discussion of any remedies that may be needed.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Part 1 of the Interim Trail could adversely affect the San Francisco dusky-footed woodrat through habitat modification and direct impacts to woodrat houses. During Part 1 of the Interim Trail, 0.8 acres of tree removal would occur in woodrat habitat, including coast live oak woodland, riparian habitat, and non-native forest. Tree removal, vegetation removal, grubbing, grading could directly impact woodrat houses and degrade woodrat habitat. Noise-producing activities in proximity to woodrat houses could disrupt woodrats and their young. These impacts are similar to those described in greater detail above under the Proposed Project.

Potential impacts could be reduced to a less than significant level with the mitigation described above under the Ultimate Trail. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-7, BIO-9a, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-7: Implement Dusky-Footed Woodrat Protection Measures During Construction

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Part 2, Demolition of the Interim Trail and Rebuilding of the rail line would not result in additional direct loss of additional woodrat houses or habitat modification of additional woodrat habitat. The operation of large noise-producing equipment during construction could disrupt woodrats in proximity to the work area.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-7, BIO-9a, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-7: Implement Dusky-Footed Woodrat Protection Measures During Construction

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

3) Construction of the Ultimate Trail Configuration

Part 3 of the Interim Trail could adversely affect the San Francisco dusky-footed woodrat through habitat modification and direct impacts to woodrat houses. During Part 3 of the Interim Trail, 1.57 acres of tree removal would occur in woodrat habitat, including coast live oak woodland, riparian habitat, and non-native forest. Tree removal, vegetation removal, grubbing, grading could directly impact woodrat houses and degrade woodrat habitat. Noise-producing activities in proximity to woodrat houses could disrupt woodrats and their young. These impacts are similar to those described in greater detail above under the Proposed Project.

Potential impacts could be reduced to a less than significant level with the mitigation described above under the Ultimate Trail. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-7, BIO-9a, BIO-9c).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-7: Implement Dusky-Footed Woodrat Protection Measures During Construction

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the Interim Trail Parts 1, 2 and 3 have a combined direct impact on woodrat houses and on modification of woodrat habitat with a larger overall footprint and combined loss of trees and understory vegetation. The combined Interim Trail would result in the permanent displacement of 2.37 acres of woodrat habitat, including coast live oak woodland, riparian habitat, and non-native forest. In addition, construction would occur over three stages, thereby subjecting woodrats to three sets of construction activities and the associated impacts.

Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-7, BIO-9a, BIO-9c).

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would result in more impacts to woodrat houses and habitat than the Proposed Project without the optional Interim Trail, because the overall footprint of the Interim Trail is larger and would require more tree removal; an additional 0.43 acres of trees would be removed (2.37 acres overall for the Optional Interim Trail vs. 1.94 acres for the Ultimate Trail alone). Construction of the Interim Trail would also impact additional understory vegetation, food sources and important woodrat habitat features. Additionally, the Optional Interim Trail results in two additional construction periods, and associated impacts, albeit over a period of an estimated 25 years. The impact of the Proposed Project would be **less than significant with mitigation** with or without the optional Interim Trail.

Impact BIO-8 THE PROJECT COULD ADVERSELY AFFECT MARINE MAMMALS, INCLUDING SOUTHERN SEA OTTER. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Project construction and operation along Segment 9 of the Project corridor could have an adverse effect on marine mammal species as a result of trail construction activities and trail use over and adjacent to the Santa Cruz Harbor, as well as near the San Lorenzo River.

The southern sea otter is listed as Threatened under the FESA (USFWS 1977), a Fully Protected species under CDFW (CDFW 2022e) and a Species of Special Concern by the Marine Mammal Commission (CDFW 2022d). The Project corridor intersects the estuarine San Lorenzo River, where occurrence of the southern sea otter is rare. The southern sea otter is present occasionally in the Santa Cruz Harbor.

The California sea lion and eastern Pacific harbor seal are protected under the Marine Mammal Protection Act. The sea lion occurs occasionally in the Santa Cruz Harbor, during fish runs and when individual sea lions utilize the docks as haul outs. The harbor seal is residential within the harbor, foraging at the Bait Dock and utilizing the docks as haul outs, including during molting season, during which harbor seals spend more time out of the water.

Construction

No construction activities would occur within or over the waters of the San Lorenzo River or on the embankments. Trail construction would occur above the break in bank on the east side of the San Lorenzo River Trestle Bridge. As described in Section 2.6, erosion and sediment control measures would be installed and maintained during construction to reduce the introduction of sediment,

construction debris, and contaminants to the river. These measures would avoid and minimize potential impacts to southern sea otter, if present in the San Lorenzo River.

Construction activities would occur over, but not within, the Santa Cruz Harbor. As described in Section 2.6, a debris containment device would be installed under the existing Woods Lagoon Railroad Bridge that crosses the harbor. The debris containment device would span several feet beyond the edge of the proposed cantilever to ensure construction debris and materials do not enter the Santa Cruz Harbor. The debris containment device would be secured to the existing railroad bridge and would remain in place during all construction activities over the water. This device, in addition to erosion control measures, would protect marine mammal habitat in the harbor.

Construction activities over the harbor would generate noise levels that are comparable to those generated at the adjacent boatyard. No pile driving or other loud activities that have the potential to cause injury to marine mammals would occur.

Additional mitigation would be required to reduce this impact to less than significant. Mitigation Measure BIO-2, described under Impact BIO-2, would inform construction personnel about the presence of marine mammals and would include regular inspections of the work area to ensure compliance with protective measures. Mitigation Measures BIO-9a would minimize construction in sensitive habitats, through minimizing the construction footprint (confining construction equipment, operations, staging, and access to designated areas) and the installation of temporary protective construction fencing. Mitigation Measure BIO-9c outlines BMPs to further protect sensitive and aquatic habitats during construction, to protect water quality, prevent erosion and sedimentation, and protect marine mammal habitat. This measure also identifies the preferred construction window (the dry season) for work in or near aquatic features which would minimize sediment-laden runoff into aquatic features.

Additionally, as described for Impact HYD-1 in Section 3.8, *Hydrology and Water Quality*, water quality would be protected through implementation of the BMPs to be included in the construction specifications and compliance with the NPDES-required SWPPP, City's Grading Ordinance, and County's grading regulations would reduce the risk of water degradation on and off site from soil erosion and other pollutants related to construction activities would not obstruct or conflict with the implementation of the Central Coast Basin Plan.

There would be no direct Project impacts to the Monterey Bay National Marine Sanctuary. Potential indirect impacts, such as the introduction of sediment, debris, or contaminants would be avoided and minimized with implementation of the mitigation measures described above.

Additionally, USFWS, NOAA Fisheries, and CDFW may require additional measures to protect southern sea otter, California sea lion, and eastern Pacific harbor seal. As stated in Section 2.7, *Required Permits and Approvals*, the Project may require permits from USFWS, NOAA Fisheries, and would require permits from CDFW. As part of this process, the City could request technical assistance from USFWS and NOAA Fisheries. CDFW may identify additional protective measures for marine mammals during the Lake and Streambed Alteration Agreement permitting process.

Therefore, the construction impacts would be **less than significant with mitigation (**Mitigation Measures BIO-2, BIO-9a, and BIO-9c).

Operation

Trail operation could result in increased impacts to the San Lorenzo River and the Santa Cruz Harbor through an increase in human traffic that could result in increased erosion, sedimentation and/or

the deposition of trash and human/dog excrement which could runoff into the river and/or harbor. This potential impact would be reduced to a less than significant level by implementing Mitigation Measure BIO-10b. Mitigation Measure BIO-10b, which is described in detail under Impact BIO-10, outlines the development of a Project-specific Biological Resources Mitigation and Management Plan (MMP), which would mitigate temporary disturbance and permanent loss of aquatic habitats. The MMP would include provisions to protect water quality in aquatic features through the development of vegetated swales which would protect water quality entering the San Lorenzo River from the east side.

There would be no direct Project impacts to the Monterey Bay National Marine Sanctuary. Potential indirect impacts, such as sediment or other contaminated runoff would be avoided and minimized with implementation of the mitigation measure described above.

Therefore, the Project operation impacts would be **less than significant with mitigation** (Mitigation Measures BIO-10b).

In summary, the construction and operation impacts to marine mammals would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9c, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

During implementation of Part 1 of the Interim Trail, the removal of the tracks and ballast and construction of the trail could result in the introduction of sediment, other materials, or chemicals to the San Lorenzo River and the Santa Cruz Harbor. Hazardous runoff could negatively affect water quality in the San Lorenzo River and the Santa Cruz Harbor, which provide habitat for marine mammals. To avoid these impacts, erosion and sediment control measures would be installed and maintained to reduce sediment, other materials, and chemical-laden runoff introductions to the waterbodies. No work would occur below the break in bank of aquatic features. In addition, as described in detail under the Ultimate Trail above, a debris containment device would be employed during construction to prevent construction materials from entering the water. Impacts associated with trail use would be the same as those described under the Proposed Project above.

Mitigation measures for these potential construction and operational impacts would be the same as for the Proposed Project and are described in detail above.

Therefore, the construction impacts would be **less than significant with mitigation (**Mitigation Measures BIO-2, BIO-9a, BIO-9c, and 10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Implementation of Part 2 of the Interim Trail (demolition of the Interim Trail) could also result in the introduction of hazardous materials and sediment into the San Lorenzo River and the Santa Cruz Harbor, as described above under the Ultimate Trail and Part 1 of the Interim Rail. As noted above, mitigation measures to protect the water quality of these features and marine mammal habitat would be employed.

Therefore, the construction impacts would be **less than significant with mitigation (**Mitigation Measures BIO-2, BIO-9a, BIO-9c, and 10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

3) Construction of the Ultimate Trail Configuration

No construction activities would occur within or over the waters of the San Lorenzo River or on the embankments. Trail construction would occur above the break in bank on the east side of the San Lorenzo River Trestle Bridge. Construction activities would occur over, but not within, the Santa Cruz Harbor. As described in Section 2.6, erosion and sediment control measures would be installed and maintained during construction to reduce the introduction of sediment, construction debris and contaminants to the river, and a debris containment device would be installed under the existing Woods Lagoon Railroad Bridge that crosses the harbor. This device, in addition to erosion control measures, would protect marine mammal habitat in the harbor from water quality impacts.

As described under the Proposed Project above, Mitigation Measure BIO-2, BIO-9a and BIO-9c would inform construction personnel about the presence of marine mammals, would include regular inspections of the work area to ensure compliance with protective measures, and would protect aquatic features that support marine mammals and adjacent habitats from water quality impacts. Mitigation Measure BIO-9c also identifies the preferred construction window (the dry season) for work in or near aquatic features which would minimize sediment-laden runoff into aquatic features.

There would be no direct Project impacts to the Monterey Bay National Marine Sanctuary. Potential indirect impacts, such as the introduction of sediment, construction debris and contaminants would be avoided and minimized with implementation of the mitigation measures described above.

Additionally, USFWS, NOAA Fisheries, and CDFW may require additional measures to protect southern sea otter, California sea lion, and eastern Pacific harbor seal as described under the Proposed Project above.

Therefore, the construction impacts would be **less than significant with mitigation (**Mitigation Measures BIO-2, BIO-9a, BIO-9c, BIO-10b).

Combined Effect of Interim Trail Parts 1, 2, 3

Although occurring over an extended period of time, the combined effect of Parts 1, 2, and 3 of the Interim Trail is that significant construction activities would be performed three times adjacent to the San Lorenzo River and over the Santa Cruz Harbor. The associated potential impacts to water quality and marine mammal habitat would be the same for each construction period and greater overall for the combined Interim Trail. Mitigation, as described above, would be the same for each part of the Interim Trail and, overall, for the combined Interim Trail.

Therefore, the construction impacts would be **less than significant with mitigation (**Mitigation Measures BIO-2, BIO-9a, and BIO-9c).

Comparison of Proposed Project Impact with/without Optional Interim Trail

The impacts of the Proposed Project, with and without the optional Interim Trail would be similar. The construction-related impacts of the Project with the optional Interim Trail would be greater because it would subject the marine mammals and their habitat in the Santa Cruz Harbor and San Lorenzo River to two additional construction periods over an estimated 25 years. The impact of the Proposed Project would be **less than significant with mitigation** with or without the optional Interim Trail.

Impact BIO-9 THE PROJECT WOULD RESULT IN ADVERSE EFFECTS TO RIPARIAN HABITAT, OTHER SENSITIVE NATURAL COMMUNITIES, AND COASTAL ACT ESHA. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

The Project includes construction of a multipurpose trail system that could result in adverse effects to sensitive natural communities and areas defined as Environmentally Sensitive Habitat Areas (ESHAs) by the California Coastal Act. Sensitive habitat types, including ESHA, with potential for project-related impacts are coast live oak woodland and forest, and arroyo willow and mixed riparian forest.

Palustrine emergent wetlands, scrub-shrub (willow) wetlands, and aquatic/riverine habitats, also considered sensitive habitats, are addressed separately in Impact BIO-10.

The Project corridor is composed of both Segments 8 and 9, and areas defined as ESHA are limited to Segment 9.

In Segment 8, between the Beach Street/Pacific Avenue roundabout and the San Lorenzo River Trestle Bridge, the Project includes improvements to the existing paved sidewalks and cycle track within the roadway along Beach Street, which is heavily developed with commercial, residential, and recreational uses including the Santa Cruz Beach Boardwalk.

In Segment 9, between the San Lorenzo River Trestle and 17th Avenue, the Project includes a new separated multipurpose trail situated on the north (inland) of the railroad tracks until El Dorado Avenue, where it shifts to the south (coastal) side. The Project corridor in Segment 9 is composed of sloped, natural embankments with mature vegetation, much of which is narrowly constrained to the corridor by adjacent urbanized lands. In several areas, the corridor passes through open spaces including Woods Creek, the Santa Cruz Harbor, and Twin Lakes State Beach which contain an array of sensitive habitat types, including occurrences of special-status plants and wildlife.

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The majority of Project impacts to sensitive habitats, including ESHA, reflect partial encroachment into these areas to allow for construction of the trail, such as near Woods Creek and Twin Lakes State Beach. Permanent vegetation removal would not occur beyond the areas required for trail construction and minor rail realignment within the rail corridor. In many areas, the trail would be immediately adjacent to sensitive habitat types, such as coast live oak woodland, coastal prairie grassland, monarch roost sites, and riparian habitats.

The Proposed Project (Ultimate Trail Configuration) has been designed and redesigned, based on preliminary analysis of biological resources, to minimize encroachment into sensitive habitat to the extent feasible, while still complying with CPUC requirements for trails along a rail corridor and Class 1 trail requirements for an ADA multipurpose trail. For example, the trail is located on a viaduct (instead of at grade with retaining walls) in several locations, including near monarch roost habitat on the west and east sides of Santa Cruz Harbor and along Twin Lakes State Beach Park.

The Proposed Project and its potential impacts to ESHA would require a California Coastal Commission Coastal Development Permit. Based on the Commission's ongoing precedent of approving similar paved multi-use trails in or adjacent to ESHA, including wetlands, the City and County of Santa Cruz consider the Proposed Project, as a coastal trail, to be resource-dependent. Where the trail would pass through an ESHA, it must be designed to prevent "any significant disruption of habitat values." Where the trail is adjacent to ESHA, it must be "designed to prevent impacts which would significantly degrade" the ESHA and "be compatible with the continuance of" the ESHA. Such outcomes can be achieved through a combination of on-site mitigation strategies.

The Proposed Project would facilitate pedestrian and bicycle access to coastal recreation areas, and would incorporate nature study of these unique coastal habitats through interpretative signs, as described in Section 2.4. Fencing and existing dense plantings along the trail would minimize impacts of unpermitted off-trail access into sensitive habitats, while identified mitigation would protect the ecological functions and values of the ESHA.

The Proposed Project, like those previously approved, would provide opportunities for public access and recreation; it would also increase public awareness and understanding of sensitive biological resources, benefits that depend on the Proposed Project's setting in ESHA and other coastal areas. These objectives are consistent with allowable uses in EHSA, as outlined in Section 30240 of the Coastal Act (1976).

Construction

In general, construction activities would take place within the up to 12-foot-wide trail corridor, but there could be temporary disturbance to up to 10 feet on either side of the alignment. In constrained or environmentally sensitive areas, construction activities outside the 12-foot-wide trail alignment would be minimized and contained to the Proposed Project trail alignment to the extent possible.

The amounts of temporary and permanent impacts to sensitive habitat are shown in **Table 3.3-6**. Impacts to sensitive habitats within the construction footprint may result in disruption of the habitat, such as vegetation removal or trimming, soil compaction, and changes in canopy, cover, density, and shading. These areas would be revegetated after construction. However, because of the potentially lengthy period of time required for the habitat to successfully reestablish and reach maturity, construction-related impacts would, in some areas, be considered permanent. Impacts to sensitive habitat total 2.36 acres for the Ultimate Trail Configuration.

Table 3.3-6 Temporary and Permanent Impacts to Sensitive Habitat from the Proposed Project

	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)			Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1, 2, and 3		
Habitat Type[a]	Temporary Impacts (acres)	Permanent Impacts (acres)	Total (acres)	Temporary Impacts (acres)	Permanent Impacts (acres)	Total (acres)
Arroyo willow and mixed riparian forest	0.01	0.10	0.11	0.03	0.11	0.14
Coast live oak forest	0.62	0.87	1.49	0.97	1.13	2.10
Monarch Roost Sites (eucalyptus and Monterey Cypress groves)	0.41	0.34	0.75	0.63	0.49	1.12
Total	**1.05**	**1.31**	**2.35**	**1.63**	**1.73**	**3.36**

[a] These habitat types are considered potential nesting bird habitat

Implementation of Mitigation Measures BIO-9a, b, c, described below, would protect sensitive habitat during construction to the greatest extent feasible, and mitigate permanent and temporary losses where possible through avoidance, minimization, and construction-related BMPs. Mitigation Measure BIO-9b requires development of a Project-specific biological resources mitigation and management plan (MMP). Compensatory mitigation outlined in Mitigation Measure BIO-9b, within the study area or on suitable public or private land in proximity to the Project corridor, would address permanent loss of arroyo willow and mixed riparian forest, coast live oak woodland and forest, and monarch roost habitats.

Therefore, the construction-related impact would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

Operation

Once constructed, trail use could result in adverse effects on sensitive habitats by disturbing vegetation immediately adjacent to the pathway and by directly and indirectly affecting wildlife using these areas for nesting/denning, foraging, dispersal and movement. Throughout Segment 9 of the Project corridor, the trail would be located within and immediately adjacent to sensitive riparian, coast live oak woodland and forest, and monarch roost sites. These sensitive habitat areas may be impacted by user activities including, but not limited to, unpermitted off-trail access, transient loitering and encampments, litter, and elevated noise.

As described in Section 2.4.1 under *Trail Features*, the Project includes safety fencing to separate trail users from the rail, as needed, and fencing and/or guardrails along the sides of bridges, viaducts and other areas along the trail for safety and security. The fencing, if present, would discourage trail users from loitering and leaving the trail into adjacent sensitive habitat. The Project also includes trash receptacles at four roadway crossings (Mott, Seabright, 7th, and 17th Avenues), one new bench at Simpkins Swim Center, and informational/educational signage at locations to be determined.

Implementation of Mitigation Measure BIO-9b would reduce permanent impacts on sensitive habitats by developing a Project-specific resource management plan to further deter encroachment into sensitive habitats with fencing, dense vegetative barriers, and interpretative panels, and through the creation and restoration of in-kind habitats with similar or greater ecological functions and values to those displaced by the Project. Mitigation habitats would be located within the study area to the extent feasible and/or on suitable public and private lands in proximity to the alignment. Together with similar mitigation for aquatic features, identified in the discussion below for Impact BIO-10), edge habitats and habitat mosaics would be protected and/or replaced/enhanced.

Therefore, the operational impact would be **less than significant with mitigation** (Mitigation Measures BIO-9b).

Overall, the construction and operation impacts would be **less than significant with mitigation** (Mitigation Measure BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Coordinating agencies (City, County, and/or RTC) constructing portions of Segment 9 and the construction contractor shall implement the following measures:

- To the extent feasible, all trail construction activities, including access routes, staging areas, stockpile areas, and equipment maintenance are to be located outside the limits of mapped sensitive habitats. Sensitive habitat areas shall be mapped by a qualified biologist and clearly shown on construction plans. Sensitive habitat areas include, but may not be limited to: Santa Cruz tarplant habitat in coastal prairie grassland at Twin Lakes State Beach, monarch butterfly roosting habitat near Woods Creek and the Santa Cruz Harbor riparian habitat along Pilkington Creek and Leona Creek, and coast live oak woodland and forest along to the rail corridor.
- During construction, temporary fencing (e.g., silt fencing) shall be installed at the outermost edge of sensitive habitats and shall not be disturbed except as required for trail construction. Vegetation removal shall be limited to the minimum extent necessary to achieve project objectives. Mature trees will be retained wherever feasible and limbing of trees and shrubs in arroyo willow and mixed riparian forest, coast live oak woodland and forest, and potential and/or known monarch roost habitat should be favored in lieu of removal. When possible, in temporary impact areas, stumps and burls of native coast live oaks, coast redwoods, Pacific wax myrtle, and arroyo willows shall be retained to allow for re-sprouting following project completion.
- Limbing and removal of coast live oak trees located in coast live oak woodland and forest habitat shall be minimized to maintain canopy cover, nesting and roosting habitat for bird and bat species, and understory habitat for wildlife, including woodrats and other small mammals.

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Coordinating agencies (City, County, and/or RTC) constructing portions of Segment 9 and the construction contractor shall implement the following measures.

A qualified (USFWS- and CDFW-approved) biologist shall prepare a Project-specific Biological Resources Mitigation and Management Plan (MMP) to compensate for direct and indirect impacts to sensitive habitats, including ESHA, and other sensitive biological resources resulting from trail construction and operation. The MMP shall compensate for permanent loss of sensitive habitats, through the creation, restoration, and enhancement of in-kind sensitive habitat, as close to impacted areas as possible within the study area.

To protect against the loss of ecological functions and values, compensatory mitigation shall re-create the following features of existing sensitive habitat that would be impacted by the Proposed Project: habitat mosaic, edge habitats, and proximity to wetlands and other waters. A portion of compensatory mitigation shall re-create the linear aspect and provision for wildlife dispersal of existing habitats, where these features are potentially lost as a result of the Proposed Project. This feature shall be designed to protect against fragmentation of remaining habitat patches adjacent to the rail corridor. Due to limited available space remaining within the corridor after trail construction and minor railbed realignment, these wildlife corridor improvements will likely occur north and south of the study area to connect the existing disjunct open spaces utilized by wildlife within the urbanized portion of Santa Cruz including Woods Creek, Arana Gulch, Twin Lakes Beach State Park, and Rodeo Gulch.

In addition, the Biological Resources MMP shall include the following:

- Description of the trail alignment including as-built acreage of temporary and permanent impacts to arroyo willow and mixed riparian forest, coast live oak woodland and forest, and monarch butterfly roost sites, including the number and type of trees slated for removal City and County status as Heritage or Significant trees, respectively.
- Ecological functions and values assessment of sensitive habitats, including monarch butterfly habitat to determine suitable mitigation ratios (at a minimum, no net loss) in consultation with USFWS, CDFW, and California Coastal Commission (CCC).
- Goals of compensatory mitigation, including types and areas of sensitive habitat to be created, restored, enhanced and/or preserved; number and type of trees to be replaced, specific functions and values of mitigation habitat types, mitigation ratios (created/restored/enhanced/preserved: impacted), and performance criteria, including:
    - □ Conservation of functions and values of monarch autumnal and overwintering roost habitat and nectaring sites (including maintaining suitable grove structure, wind protection, and water sources);
    - □ Conservation of edge habitats; and
    - □ Conservation of functions and values for wildlife movement including habitat mosaics, links between creeks, open spaces and safe passage across the proposed alignment, with perennial water sources, diverse food sources, cover, and shelter.
- Such compensatory mitigation must occur as close to impacted areas as feasible and result in no net loss (minimum 1:1 replacement ratio) of sensitive habitat types, or their functions and values. In the Coastal Zone, mitigation ratios for ESHA typically start at 3:1 (creation/substantial

restoration: impact) for ESHA. This ratio is doubled for enhancement (6:1) and tripled for preservation (9:1); however, a minimum of 1:1 must include creation of in-kind ESHA habitat.

- Location and acreage of sensitive habitat, including monarch roost habitat, mitigation areas including ownership status, and existing functions and values of restored and/or enhanced sensitive habitats.
- Project stakeholders including the City, County, and RTC would identify undeveloped public and private properties as potential mitigation areas. Acquisition could include direct purchase or placement of conservation easements on portions of parcels that are otherwise constrained from development due to existing protected resources (e.g., County and City aquatic and riparian setbacks, ESHA, steep slopes, etc.). Where potentially restricted from development, suitable areas for mitigation would not be precluded from habitat creation, restoration, enhancement, or preservation as needed to fulfill mitigation acreage and proximity requirements.
- Detailed sensitive habitat creation and/or restoration construction and planting techniques.
- Description and design of habitat requirements for sensitive wildlife known to occur in the study area and immediate surroundings (including monarch roost sites, federally listed fish species, potential Santa Cruz black salamander, western pond turtle, bald eagle, American peregrine falcon, native nesting bird species, potential roosting bat species, San Francisco dusky-footed woodrat, and marine mammals).
- Maintenance activities during operation shall include replanting native vegetation found within similar habitats within the same watershed and weed eradication that avoids take of sensitive wildlife species (e.g., woodrat, breeding birds). Trail maintenance activities would employ hand-tools only. The use of pesticides or herbicides would be prohibited.
- Strategies to protect remaining sensitive habitats along the trail corridor and surroundings from direct and indirect impacts from trail users and illegal camping, such as:
    - □ Split-rail and wire fencing
    - □ Interpretive signage including specific information about sensitive habitats and species and “leave no trace” content
    - □ “Green fencing” (dense vegetative buffers consisting of woody and plant species that deter human passage such as poison oak, Pacific blackberry, and stinging nettle)
- Strategies to protect wildlife movement, both across and along the trail corridor, as well as north and/or south of the corridor to connect open spaces, supported by complex and mature sensitive habitat mosaics, including perennial water sources.
- Long-term quantitative and qualitative monitoring and reporting, including consideration of carrying capacity analysis and alternative approaches, and documenting the ability to meet or surpass performance criteria.
- Adaptive management strategies to:
    - □ Identify shortcomings in meeting performance standards;
    - □ Ensure long-term viability of existing, enhanced, restored, and/or newly created sensitive biological resources;
    - □ Enhance ecological functions and values of sensitive habitat mitigation areas, including monarch butterfly habitat and habitat for wildlife movement;
    - □ Ascertain the sufficiency of trail access, facilities development and management, and interpretive design features associated with the project to protect biological resources.

Mitigation area locations and final replacement ratios (e.g., potentially above the minimum "no net loss" ratio set here) shall be determined in consultation with the relevant agencies, as follows.

- **U.S. Fish and Wildlife Service (USFWS).** Monarch butterfly (presently FESA Candidate species, likely Threatened or Endangered by 2024)
- **California Department of Fish and Wildlife (CDFW).** Sensitive habitats, work below the break in bank of stream corridors, riparian habitat, CESA Endangered and Fully Protected species, Species of Special Concern
- **California Coastal Commission (CCC).** Environmentally sensitive habitat areas (ESHA)
- **California State Parks.** Sensitive resources and habitats on Twin Lakes State Beach property
- **Regional Water Quality Control Board (RWQCB).** Non-wetland riparian habitat

The *draft* MMP shall be submitted to USFWS, NOAA Fisheries, CDFW, CCC, and California State Parks for review prior to formal adoption. Monitoring reports will be provided to these agencies.

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

During construction of Segment 9, the City and/or County (depending on the implementing agency/jurisdiction) and the construction contractor shall ensure the following best management practices (BMPs), to protect water quality and biological resources during project construction activities, are included in the construction specifications and implemented during Project construction:

- Minimize removal or disturbance of existing vegetation outside the footprint of project construction activities.
- Limit site access and parking, equipment storage and stationary construction activities to the designated staging areas to the maximum extent feasible.
- Prior to staging any equipment or vehicles within or adjacent to the rail corridor, clean all equipment caked with mud, soils, or debris from off-site sources or previous project sites to avoid introducing or spreading invasive exotic plant species. When feasible, remove invasive exotic plants from the Project area. All equipment used on the site should be cleaned prior to leaving the site for other projects.
- Position all stationary equipment such as motors, pumps, generators, and/or compressors over drip pans. At the end of each day, move vehicles and equipment as far away as possible from any water body adjacent to the Project site in a level staging area. Position parked equipment also over drip pans or absorbent material.
- Check under all equipment for wildlife before use. If any listed or special-status wildlife is observed under equipment or in the work area, do not disturb or handle it. Cease Project activities and contact the biological monitor or resource agencies for further guidance, if the animal continues to be encountered in the Project area.
- If security fencing is installed around the construction site, allow for passage of wildlife to maintain a link between inland and coastal habitats including stream corridors during construction activities. Prohibit the use of plastic mesh safety fencing to prevent wildlife entrapment.
- Avoid working at night or during rain events when special-status amphibians and mammals are generally more active. Consult weather forecasts from the National Weather Service at least 72 hours prior to performing work.
- Properly contain and remove all food trash that may attract predators into the work area and construction debris and trash from the work site on a regular basis.

- Refuel and perform all vehicle and/or equipment maintenance off site at a facility approved for such activities.
- To the greatest extent feasible, stabilize all exposed or disturbed areas in the Project area. Install erosion control measures as necessary such as silt fences, jute matting, weed-free straw bales, plywood, straw wattles, and water check bars, and broadcasting weed-free straw wherever silt-laden water has the potential to leave the work site and enter the nearby streams. Prohibit the use of monofilament erosion control matting to prevent wildlife entanglement. Modify, repair, and/or replace erosion control measures as needed.
- Revegetate with native vegetation found within similar habitats within the same watershed to minimize erosion, prevent the establishment of invasive weeds, and accelerate the recovery of native vegetation communities.
- Whenever feasible, certain construction activities will be timed to avoid impacts to sensitive habitats and wildlife species, as presented in **Table 3.3-7**. Ideally, most if not all vegetation clearing will be done in the fall.

Table 3.3-7 Preferred Timing for Construction Activities Listed by Biological Resource

Biological Resource	Preferred Period of Avoidance	Preferred Construction Window	Life Events/Functions/ Values to be Protected	Construction Activity to Be Avoided
Arroyo Willow and Mixed Riparian/ Habitats below the break in bank	Rainy season, approximately October 15–May 31	June 1–October 15	Stable banks, slopes, and soil	All construction
Sensitive Fish Species/Western Pond Turtle/ Potential SC Black Salamander/Marine Mammals[a]	Rainy season, approximately October 15–May 31	June 1–October 15	Fish migration/critical habitat functions and values	Work in or near aquatic features and riparian vegetation
Monarch Butterfly	Autumnal and Overwintering roost season, approximately September 15–March 31	April 1–September 15	Autumnal roosting, overwintering and nectaring activities	All construction within designated buffers; cutting, limbing, and tree removal, noise and vibration within 300 feet of roost sites prior to temperature reaching 55° F
Bird Species	February 1–August 31	September 1–January 31	Nesting activities	All construction within designated buffers from active nest sites
Bat Species	November 1–February 15 and May 1–August 31	February 15–April 30 and September 1–October 31	Roosting, especially maternity roosts and winter hibernacula	Pruning, limbing, and tree removal
San Francisco Dusky-Footed Woodrat	October 15–July 31	August 1–October 15	Houses, especially during breeding and rearing	Vegetation/tree removal and woodrat relocation
Tree removal	October 15– August 31	Sept 1–Oct 15 (this is during the beginning of the monarch autumnal roost period)	Breeding birds, bats, roosting monarchs, slope stability	Cutting, limbing, tree removal, monarch roost encroachment

[a] Central California coast coho salmon, central California coast steelhead, tidewater goby, and Pacific lamprey.

Note: Each "preferred" time frame or construction window indicates the type of construction activity to be avoided, if possible, and not all windows apply to all resources. Ideally, most if not all vegetation clearing and tree removal will be done during the fall, whereas there is more flexibility with the other timeframes.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail (Part 1) includes removing the rail line and constructing the 16-foot-wide Interim Trail on the existing rail bed, extending on either side to include areas with existing unmaintained/de facto walking pathways and drainage ditches, and in some areas sensitive habitat types including coast live oak woodland and forest, and monarch roost sites (eucalyptus and Monterey cypress groves). The optional Interim Trail would not impact arroyo willow riparian and would only minimally impact mixed riparian forest.

Similar to the impacts described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, the majority of impacts to sensitive habitats, including ESHA, reflect partial encroachment into these areas to allow for construction of a Class 1 multi-use (bicycle and pedestrian) trail.

Permanent vegetation removal would not occur beyond the areas required for trail construction along the existing rail bed (Interim Trail Part 1 would not require partial realignment of the rail tracks). Nevertheless, in several areas there would be little to no buffer between the trail edge and adjacent sensitive habitat types (**Figures 3.3-2a** through **3.3-2b**), particularly near Woods Creek and Twin Lakes State Beach.

CONSTRUCTION

In general, construction activities for the Part 1 of the optional Interim Trail would be within the 16-foot-wide trail alignment, but there could be temporary disturbance of up to 10 feet on either side of the alignment. The majority of construction for the Interim Trail would occur in the existing cut and rail bench that forms the rail corridor.

The amount of temporary and permanent impacts to sensitive habitat is shown in **Table 3.3-6**. Impacts to sensitive habitats within the construction footprint may result in disruption of the habitat, such as vegetation removal or trimming, soil compaction, and changes in canopy, cover, density, and shading. Although these areas will be revegetated after construction to the extent feasible, because of the potentially lengthy period of time required for the habitat to successfully reestablish and reach maturity, construction-related impacts would, in some areas, be considered permanent. Combined impacts to sensitive habitats for Part 1 of the optional Interim Trail total 1.96 acres.

Implementation of Mitigation Measures BIO-9a, b, c, described above, would protect sensitive habitat during construction to the greatest extent feasible, and mitigate permanent and temporary losses where possible through avoidance and minimization, construction-related BMPs, and compensatory mitigation for permanent loss of arroyo willow and mixed riparian forest, coast live oak woodland and forest, and monarch roost habitats.

Therefore, the construction-related impact would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

OPERATION

Operation (trail use) of the optional Interim Trail (Part 1) would result in potential impacts to sensitive habitats resulting from trail usage which may include unpermitted off-trail access, transient encampments, litter, and elevated noise. The impacts would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, with less

permanent impacts to sensitive habitat (0.69 acres, instead of 1.31 acres) because the Interim Trail (Part 1) would be located on the existing rail bed. The temporary impacts to sensitive habitat would slightly greater (1.27 acres, instead of 1.05 acres). The combined impacts to sensitive habitat from Interim Trail (Part 1) would be 1.96 acres, instead of 2.36 acres.

As described in Section 2.4.2 under *Trail Features*, the Project includes fencing and/or guardrails for safety in areas where drop offs are over 30 inches, which would discourage trail users from leaving the trail. The Project also includes trash receptacles at four roadway crossings (Mott, Seabright, 7th, and 17th Avenues), possible benches at six locations along the trail alignment (including three between 7th Avenue and Simpkins Swim Center) and a bike share station at the Seabright Avenue crossing, and informational/educational signage at locations to be determined. The benches could encourage loitering and leaving the trail into sensitive habitat.

Implementation of Mitigation Measure BIO-9b would reduce permanent impacts on sensitive habitats by developing a Project-specific resource management plan to deter encroachment into sensitive habitats with fencing, dense vegetative barriers, and interpretative panels, and through the creation and restoration of in-kind habitats with similar or greater ecological functions and values to those displaced by the Project. Mitigation habitats would be located within the study area to the extent feasible and/or on suitable public and private lands in proximity to the area of impact or where mitigation would improve or restore wildlife movement between open spaces along the corridor. Together with similar mitigation for aquatic features, identified in the discussion below for Impact BIO-10, edge habitats and habitat mosaics would be protected and/or replaced/enhanced.

Therefore, the operational impact would be **less than significant with mitigation** (Mitigation Measure BIO-9b).

Overall, the construction and operation impacts would be **less than significant with mitigation** (Mitigation Measure BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) would not result in additional permanent impacts to sensitive habitats. However, demolition activities could temporarily disturb and/or displace wildlife along the corridor and construction activities during this phase could result in impacts resulting from dust, noise, soil compaction, litter, invasive weed introductions, and stockpiling of soils and debris. These construction-related impacts would be similar to that described above for both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail (Part 1).

The construction-related impact would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices to Protect Biological Resources during Construction

3) Construction of the Ultimate Trail Configuration

Construction and operation impacts of the Ultimate Trail Configuration, constructed as Part 3 of the optional Interim Trail, would be similar to that described above for the *Proposed Project: Trail nest to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact BIO-9, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*.

These impacts would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effect of the Interim Trail Parts 1, 2, and 3 would result in 3.36 total acres of potential impacts to sensitive habitats (**Table 3.3-6**). Moreover, the optional Interim Trail would be constructed during three different periods, thereby subjecting sensitive habitats and wildlife to potential project-related impacts during each part of the Project. Nevertheless, Mitigation Measures BIO-9a, b, c and BIO-10a, b will result in impacts that are **less than significant with mitigation** for the Interim Trail option.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Compared to the Proposed Project, Part 1 of the optional Interim Trail would result in fewer direct impacts to sensitive habitat types because the trail would be primarily centered on the existing developed railbed. However, the overall impacts to sensitive habitats from the Parts 1, 2, and 3 of Proposed Project with the optional Interim Trail would be higher than the Proposed Project without the Interim Trail (Ultimate Trail Configuration). The optional Interim Trail subjects coast live oak woodland, riparian, and monarch roost habitats to three different construction periods with potential to cause direct and indirect harm to these areas, whereas the Proposed Project (Ultimate Trail Configuration only) has one construction period. Additionally, due to the shifted orientation of the trail, some impacts to sensitive habitat for Part 1 of the Interim Trail are not required for the Proposed Project (Ultimate Trail Configuration). Completing the Ultimate Trail Configuration as Part 3 of the Interim Trail would thereby result in greater potential (cumulative) impacts to sensitive habitats, than by constructing the Proposed Project, without the optional Interim Trail. The impact of the Proposed Project would be **less than significant with mitigation** with or without the optional Interim Trail.

Impact BIO-10 THE PROJECT WOULD RESULT IN ADVERSE EFFECTS TO PALUSTRINE EMERGENT WETLANDS AND AQUATIC/RIVERINE HABITATS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

The Proposed Project (Ultimate Trail Configuration) would result in permanent loss of approximately 0.03 acres of palustrine emergent wetlands with 0.01 acres of additional temporary wetland impacts. This feature is a two-parameter ditch wetland immediately north of the existing rail line at the west end of Segment 9, between the San Lorenzo River Trestle and Mountain View Avenue. This feature is dominated by emergent and floating hydrophytic vegetation and wetland hydrology but is lined with non-native fill (baserock) and lacks hydric soils. Therefore, with only two wetland parameters, this feature is only subject to regulation by the California Coastal Commission under the Coastal Act and Santa Cruz City LCP.

Trail construction including viaducts, minor rail realignment, and slope stabilization activities would also result in permanent loss of approximately 0.03 acres arroyo willow riparian forest, which is considered a Coastal Act wetland (hydrophytic vegetation and/or wetland hydrology). There would be 0.01 acres of temporary impacts to arroyo willow riparian wetlands within the study area.

Construction of the Ultimate Trail Configuration would directly displace the existing ditch wetland and may indirectly disrupt ecological functions and values in Pilkington Creek, by degrading water quality and vegetation through introduction of sediments and pollutants resulting from Proposed Project activities. Impacts to arroyo willow riparian forest would be similar to Impact BIO-9, for sensitive habitats, and would result in the removal or partial loss of mature willows and other associated riparian vegetation.

Aquatic/riverine habitat may be temporarily impacted by replacement or improvement of existing culverts, tunnels, viaduct bents, and slope stabilization activities. Impacts may include erosion, sedimentation, and impacts to habitat for aquatic and amphibian species. The Project will not result in permanent impacts to aquatic (including estuarine) and/or riverine habitats.

Mitigation Measure BIO-9a would minimize construction in sensitive habitats, including wetlands, and requires installation of temporary protective fencing to protect sensitive resources from construction activities including grading, staging, and materials stockpiling.

Mitigation Measure BIO-9c would require BMPs that protect water quality during construction. In addition, Mitigation Measure BIO-10a, b would minimize construction-related impacts to wetlands, aquatic and riverine features to the extent feasible, mitigate for loss, and address compensation for other sensitive habitats thus protecting the edge habitats and ecological functions and values of adjacent wetlands and aquatic features.

The construction impact would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9c, BIO-10a, BIO-10b).

Operation

Wetlands and aquatic/riverine habitats may be directly and indirectly affected by trail usage. The trail would be in proximity to the remaining wetlands, lagoons, and creeks in the study area and which could result in encroachment and trampling from unpermitted off-trail encroachment, litter, and alterations to

surface and subsurface hydrology and water quality due to increased impervious surfaces. Moreover, wetlands immediately adjacent to active trail corridors are often susceptible to introduction of invasive weeds, which may displace existing native vegetation and degrade wildlife habitat.

Mitigation Measures BIO-9b and BIO-10b, described below, would reduce this impact by requiring avoidance and minimization and compensatory mitigation for permanent loss of wetland and aquatic/riverine habitat. Therefore, the operational impact would be **less than significant with mitigation** (Mitigation Measures BIO-9b and BIO-10b).

Required Permits

As described in Section 3.3.2, *Regulatory Setting*, the Project would be required to obtain federal and state permits for impacts to palustrine emergent wetland and aquatic/riverine habitat, pursuant to Sections 401 and 404 of the Clean Water Act and Section 1602 of the CFGC. The Project would also be required to obtain a Coastal Development Permit (CDP) from the California Coastal Commission for impacts to coastal wetland habitats, including one and two-parameter wetlands. A formal jurisdictional delineation of the study area shall identify all wetlands and non-wetland "other waters" potentially impacted by the Project subject to state and federal regulations and shall be submitted to the agencies listed above for review and project permitting.

Wetlands and other Waters of the U.S. include those areas supporting hydrophytic vegetation, hydric soils, and wetland hydrology and exhibit hydrologic connectivity in the form of a "significant nexus" with Traditional Navigable Waters (TNW), including the Pacific Ocean. Placement of fill material in wetlands and other Waters of the U.S. is subject to permitting authority (jurisdiction) of the Central Coast Regional Water Quality Control Board and the U.S. Army Corps of Engineers under Sections 401 and 404 of the Clean Water Act (1977), respectively. Depending on the amount of fill material, Section 401 Water Quality Certification issued by the RWQCB and either a Nationwide or Individual 404 permit shall be required by the USACE prior to Proposed Project activities. Permits approved under CWA Sections 401 and 404 require projects to minimize impacts to jurisdictional wetlands and waters to the extent feasible and provide mitigation resulting in no net loss of jurisdictional features. This may result in creation of in-kind wetlands in consultation with the regulatory agencies or by purchasing credits at an approved wetland mitigation bank. Presently, there are no mitigation banks with service areas encompassing the Project corridor.

Wetlands meeting all three jurisdictional parameters, but lacking a significant nexus with TNWs, are still regulated by RWQCB under the Porter-Cologne Water Quality Act; and impacts to Waters of the State require WDR permit. A WDR permit typically results in similar compensatory mitigation requirements for wetland impacts to Section 401 and 404 permits.

Temporary and permanent impacts to aquatic/riverine habitat would require a Section 1602 Lake and Streambed Alteration Agreement (LSAA) from the CDFW. An approved LSAA requires measures to avoid and minimize impacts to vegetation, wildlife, and aquatic resources below the break in bank of a stream course; and requires development of compensatory mitigation strategies for direct and indirect Project impacts. Impacts to aquatic/riverine habitat, including sedimentation and streambank alteration, are also quantified and compensatory mitigation is identified.

Coastal Act wetlands, including all areas meeting at least one wetland parameter, are regulated by California Coastal Commission under Section 30233 of the Coastal Act. In these habitats, only resource-dependent uses are permitted where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects (Section 30233(a)). In addition, only certain categories of activities are

permitted in wetlands, including "[r]estoration purposes" and "[n]ature study, aquaculture, or similar resource-dependent activities" (see Section 30233, (a)(6), (a)(7) of the Coastal Act).

The City and County consider the Proposed Project, as a coastal trail, to be a "resource dependent activit[y]" involving "nature study" and similar activities. Thus, the filling of wetlands in connection with a proposed coastal trail may be permitted as long as "feasible mitigation measures have been provided to minimize adverse environmental effects," and as long as "there is no feasible less environmentally damaging alternative."

In summary, the construction and operation impacts would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Temporary Install Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

During construction of Segment 9, the City and/or County (depending on the implementing agency/jurisdiction) and the construction contractor shall minimize construction-related activities including, but not limited to, access routes, staging areas, stockpile areas, and equipment maintenance, within or adjacent to the limits of palustrine emergent wetlands and aquatic/riverine habitats, to the extent feasible. Wetlands and aquatic/riverine areas shall be clearly shown on construction plans. In coordination with a qualified biologist, temporary fencing (e.g., silt fencing) shall be installed at the outermost edge of all features not directly affected by trail construction.

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Coordinating agencies (City, County, and/or RTC) constructing portions of Segment 9 and the construction contractor shall implement the following measures.

A qualified biologist shall be retained to prepare an Aquatic Resources Mitigation and Monitoring Plan (MMP) for all direct and indirect impacts to wetlands and aquatic/riverine habitats resulting from trail construction, resulting in no net loss (minimum 1:1 replacement) of these sensitive habitat types. The mitigation area locations and replacement ratios shall be determined in consultation with the USFWS, NOAA Fisheries, USACE, Central Coast RWQCB, California Coastal Commission, and California Department of Fish and Wildlife. It is expected that mitigation requirements shall be based on the determination by the California Coastal Commission that the trail is a resource-dependent use by providing safe pedestrian and bicycle access to the recreation (e.g., beaches, open spaces, scenic viewpoints) along the central Santa Cruz coast and based on its capacity for "nature study" pursuant to Section 30233(a)(7) of the Coastal Act.

The Wetland MMP shall include the following:

- Description of the Project including acreage of temporary and permanent impacts to palustrine emergent wetlands, Coastal Act wetlands including arroyo willow riparian forest, and

aquatic/riverine features as identified in a forthcoming formal delineation of jurisdictional wetlands and other Waters of the U.S.

- Ecological functions and values assessment of wetlands, including a determination of regulatory status and permitting requirements to determine suitable mitigation ratios.
- Goals of compensatory mitigation project including types and areas of wetland and aquatic/riverine habitat to be created, restored, and/or enhanced; specific functions and values of mitigation habitat types; and mitigation ratios (created/restored/enhanced/preserved: impacted). Based on a recent memo by the Coastal Commission for a project at Gleason Beach in Sonoma County, mitigation ratios for permanent wetland impacts will likely begin at 4:1 for creation or substantial restoration. For wetland enhancement, this ratio is doubled (8:1) and tripled for habitat preservation (12:1). For all mitigation strategies, at least 1:1 must include creation of new sensitive habitat.
- Location and acreage of wetland and riparian mitigation areas including size, ownership status, and existing functions and values of restored and/or enhanced sensitive habitats. At least a portion of wetland mitigation will occur in newly constructed drainage swales north (inland) of the proposed trail. These features will be lined with clay soils and planted with a palette of agency-approved native hydrophytic vegetation and will connect directly to storm drains or watercourses along the Segment 9 alignment.
- Detailed wetland and aquatic/riverine construction and planting techniques.
- Description and design of habitat requirements for special-status plants and wildlife potentially occupying wetland and aquatic/riverine habitats.
- Maintenance activities during the monitoring period, including replanting native wetland and riparian vegetation and weed removal, that will not result in take of aquatic wildlife species.
- Long-term quantitative and qualitative monitoring and reporting, documenting ability to meet or surpass performance criteria.
- Adaptive management strategies to ensure long-term viability and enhance ecological functions and values of sensitive habitat mitigation areas.
- Strategies to protect remaining wetland and aquatic/riverine habitats along the trail alignment from direct and indirect impacts from trail users. Strategies may include split-rail fencing, interpretive signage, and green fencing (dense vegetative buffers).

The *draft* MMP shall be submitted to USFWS, CDFW, CCC, and California State Parks for review.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail (Part 1) includes removing the rail line and constructing the 16-foot-wide Interim Trail, which would be centered on the existing tracks. The trail would impact the Coastal Act ditch wetland located north of the tracks between the San Lorenzo River Trestle and Mountain View Avenue, and the impact would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. However, impacts to arroyo willow riparian wetlands would be less initially because Part 1 of the Interim Trail is confined to the rail bed and would not require viaducts crossing Pilkington Creek and Leona Creek. Temporary impacts to aquatic/riverine habitats would be similar in the two proposed alignments.

CONSTRUCTION

The optional Interim Trail (Part 1) would result in the permanent loss of 0.02 acres and temporary impacts of up to 0.003 acres of palustrine emergent wetland. No impacts arroyo willow riparian wetlands would occur during construction of the Interim Trail option. Permanent impacts to aquatic/riverine features are not expected to occur, but temporary construction impacts related to fugitive dust, litter, and introduction of pathogens and invasive species during trail construction may occur. This impact would be **less than significant with mitigation (**Mitigation Measures BIO-9a, BIO-9c, BIO-10a and BIO-10b).

OPERATION

Operation of the optional Interim Trail (Part 1) would result in similar impacts to palustrine emergent wetlands and adjacent sensitive habitat types as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Potential impacts to wetlands resulting from trail usage may include trampling from unpermitted off-trail encroachment, litter, alterations to surface and subsurface hydrology and water quality due to increased impervious surfaces, and introduction of invasive weeds. Refer to the discussion above for the Proposed Project for additional discussion on the construction and operation impacts.

The operational impact from the optional Interim Trail would be **less than significant with mitigation**. Mitigation Measures BIO-9b and BIO-10b would reduce this impact by requiring avoidance and minimization and compensatory mitigation for permanent loss of wetland and aquatic/riverine habitat.

In summary, construction and operation would result in adverse effects to palustrine emergent wetlands and aquatic/riverine habitats. The Project would comply with all federal and state permit conditions as described above. Mitigation Measures BIO-9a and BIO-9b would minimize construction-related impacts in, and address compensation for, other sensitive habitats thus protecting the edge habitats and ecological functions and values of adjacent wetlands and aquatic features. Mitigation Measure BIO-9c would require BMPs that protect water quality during construction. In addition, Mitigation Measures BIO-10a and BIO-10b would minimize construction and operation-related impacts to wetlands, aquatic and riverine features to the extent feasible and compensate for permanent losses.

Therefore, the construction and operation impacts would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Resource Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) could result in direct impacts to the newly constructed drainage swales, which also function as wetland mitigation for construction of Part 1 of the Interim Trail. Efforts should be made to protect these features in place during demolition and situate them in a way that is consistent with Part 3 which includes construction of the Ultimate Trail. There would be no operational impacts because there would be no trail in use. The construction impact would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9c, BIO-10a)**.**

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Temporary Protective Fencing

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

3) Construction of the Ultimate Trail Configuration

Construction and operation impacts of the Ultimate Trail Configuration, constructed as Part 3 of the optional Interim Trail, would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact BIO-10, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*.

Constructing the Ultimate Trail (Part 3) would not result in additional impacts to palustrine emergent wetlands unless the constructed vegetated drainage swales north of the trail need to be relocated and/or reconstructed for this phase of the Project. Installation of a viaduct over Pilkington Creek would result in impacts to arroyo willow riparian wetlands similar to that of the Proposed Project (Ultimate Trail).

The impacts would be **less than significant with mitigation** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b)

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitat Areas and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Resource Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of construction and operation of Parts 1, 2, and 3 of the Interim Trail would result in an overall increase in impacts to aquatic resources due to the requirement for two additional construction periods with the potential for direct and indirect impacts to aquatic resources all three

parts of the Project. The total permanent loss of aquatic resources, including wetlands, is approximately the same for the Ultimate Trail in both instances and no additional mitigation is required for the Interim Trail. The impact would still be **less than significant with mitigation.**

Comparison of Proposed Project Impact with/without Optional Interim Trail

Overall, the potential impacts to wetland and aquatic habitats from the Proposed Project with the optional Interim Trail would be similar to, but greater than, the Proposed Project without the Interim Trail option. This is because the Interim Trail subjects these aquatic features to three different construction periods (instead of one construction period) with potential to cause direct and indirect harm to these areas. Additionally, Parts 2 and 3 of the Interim Trail may impact, or need to relocate, the newly created drainage swales north of the trail that are planned to be used as mitigation for wetland impacts. The impact of the Proposed Project would be **less than significant with mitigation** with or without the optional Interim Trail.

Impact BIO-11 THE PROJECT WOULD INTERFERE WITH WILDLIFE MOVEMENT. (ULTIMATE TRAIL CONFIGURATION: SIGNIFICANT AND UNAVOIDABLE; OPTIONAL INTERIM TRAIL: SIGNIFICANT AND UNAVOIDABLE)

Segment 8 of the Project corridor is composed of existing sidewalks and bike lanes, along an existing roadway (Beach Street) in a heavily developed area with a substantial amount of traffic, due to the location along the Santa Cruz Boardwalk. Therefore, Segment 8 of the Project would not interfere with wildlife movement in this part of the corridor and is not discussed further.

Segment 9 of the Project corridor serves as a corridor for local wildlife movement, and the Proposed Project would interfere with wildlife movement in the corridor. During the 2021 and 2022 field surveys of Segment 9 of the Project corridor, individual wildlife species and/or their trails, tracks, and scat were observed in and adjacent to the trail alignment. These species include: coyote, fox, black-tailed deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), and brush rabbit, as well as resident and wintering bird species. Additionally, raptors, including barn owls and great horned owls were observed foraging over the alignment. Bobcat, opossum, and skunk are likely to utilize the alignment. Sierran chorus frog, common reptiles and invertebrates were also observed. The Project corridor provides functional connectivity between the surrounding habitat patches and linear habitats, as described in Section 3.3.1, *Existing Conditions*, under *Wildlife Movement*.

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Construction activities including tree and vegetation removal and construction of the trail would temporarily disrupt wildlife movement along the rail corridor. Construction activities would be limited to the daytime, whereas wildlife movement occurs predominantly at night, particularly in urban settings. Therefore, the construction-related impacts would be less than significant with mitigation.

Mitigation Measures BIO-9a and BIO-10a, described under Impacts BIO-9 and BIO-10, would minimize construction-related impacts to sensitive habitats and aquatic features which provide habitat for wildlife movement. Mitigation Measures BIO-2, BIO-9c described under Impacts BIO-2 and BIO-9, would protect wildlife moving through the Proposed Project area during construction through biological monitoring and the implementation of BMPs.

Therefore, the construction-related impacts would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO-9a, BIO-9c, BIO-10a).

Operation

Project operation (trail use) would result in the permanent loss of 1.94 acres of wildlife movement habitat, including coast live oak woodland, riparian habitat, non-native forest, and understory vegetation (**Table 3.3-2** and **Table 3.3-7**), and understory vegetation. Over this area, native vegetation, non-native forest, and ornamental plantings would be replaced with the hardscape trail infrastructure, including retaining walls, the trail itself, and the trail shoulders. This impact would degrade the functions and values of the wildlife corridor and contribute to increased fragmentation of City and County open spaces and linear aquatic features. Additionally, wildlife-friendly fencing (see footnote 23) is proposed along Twin Lakes State Beach open space and guardrails would be installed along the viaducts. These features may further impede wildlife compared to the existing conditions where wildlife can move freely through and across the corridor.

The permanent loss of trees along the rail corridor would reduce cover, shelter, foraging opportunities, and reduce available resources generally. The loss of tree canopy, especially significant and Heritage trees (see **Table 3.3-8**) would change the microclimate of the corridor through a significant reduction in shade. In this Mediterranean climate, large trees with multi-tiered canopies provide a range of functions, buffering wind, providing a combination of deep shade and dappled sun, insulation from both heat and cold, creating leaf litter, which retains soil moisture, promotes soil micro-organisms and nutrient cycling, and provides habitat for invertebrates, amphibians, reptiles, and small mammals. Understory vegetation, where present, also contributes to the value of the corridor, providing forage and refuge and further affecting the microclimate of the area. These functions are important for wildlife moving between open spaces and linear aquatic features.

The functions and values for wildlife movement of this segment of the corridor vary and, in some locations, are limited as a result of the developed surroundings, lack of cover, and barriers to movement. The rail corridor is set within the largely urbanized, residential, and light industrial areas of Santa Cruz and unincorporated Live Oak. **Table 3.3-4** describes Segment 9 of the Project corridor by sections, noting these limitations to wildlife movement. In some locations, the corridor consists of a narrow band of trees with little understory surrounded by development, such as between Bronson Street and Woods Creek; in other locations there are gaps that are entirely developed, such as crossing Seabright Avenue. Nevertheless, the rail corridor provides the only east–west movement opportunity for wildlife and serves to connect otherwise disjunct habitat patches and linear habitats, that have already been fragmented by development. The Project would result in increased fragmentation, and degradation of the functions and values of wildlife movement habitat.

Further, with formalized access, the trail would bring additional human activity to the area for walking/hiking and bicycle riding along the new trail alignment and accessing the open spaces recreational activities. Other potential effects from human activity include overall increased degradation of habitats through trampling, additional trash, human/dog excrement, and pollution of aquatic features, which may further diminish the ecological value of the movement corridor. These impacts would be permanent.

Pedestrian and bicycle traffic along the trail would be more limited at night when wildlife species are most likely to use the corridor for movement; therefore, some nighttime functions of the corridor would be retained.

The ditch wetland east of the San Lorenzo River bridge trestle would be recreated as a vegetated swale and would likely still provide a hydration point for wildlife.

Mitigation Measure BIO-9b, described under Impact BIO-9, requires a Project-specific Biological Resources MMP, which would identify specific measures to retain connectivity between drainages and open spaces, where feasible. The MMP would incorporate wildlife movement into management goals through enhancement of existing habitat patches and creation of replacement habitats that would reduce fragmentation and maintain wildlife resources such as shelter, cover, and diversity of habitat types. In order to replace the loss in east–west connectivity between open spaces and linear aquatic features that are a result of the Project, creation of new habitat for wildlife movement would be sited to increase connectivity, wherever feasible. Available land that is positioned to provide connectivity between open spaces and aquatic features near the corridor is limited, so this goal may not be attainable.

Mitigation Measure BIO-10b, described under Impact BIO-10, would compensate for losses to aquatic features including the ditch wetland along the corridor that provides a hydration point for wildlife.

However, these mitigation measures would not reduce this impact to a less than significant level, therefore, the operational impact would be **significant and unavoidable** (Mitigation Measures BIO-9b, BIO-10b).

In summary, the construction impacts would be less than significant with mitigation, but the operational impacts would be significant and unavoidable. The Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, and BIO-10b would be required to reduce the impact to the extent feasible, but not to a less than significant level. Therefore, the overall impact would be **significant and unavoidable** (Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Monitoring Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Aquatic Resources Mitigation and Monitoring Plan

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail (Part 1) includes removing the rail line and constructing the Interim Trail. Impacts to wildlife movement associated with the construction and operation of the Interim Trail (Part 1) would be similar to those described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and are described in detail above. However, the

construction impacts would be less substantial because the Interim Trail (Part 1) would be located on the railbed, temporarily resulting in less tree loss (until Part 3 of the Interim Trail is implemented). Part 1 of the Interim Trail would result in the permanent loss of 0.8 acres of wildlife movement habitat.

This impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO 9-a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Monitoring Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Wetland Mitigation and Monitoring Plan

2) Demolition of the Interim Trail and Rebuilding the Rail Line

The impact from Part 2 of the Interim Trail would be largely limited to disturbance to wildlife movement during construction since this part of the Interim Trail would not result in additional permanent vegetation removal.

This impact would be **less than significant with mitigation** (Mitigation Measures BIO-2, BIO 9-a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Monitoring Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Wetland Mitigation and Monitoring Plan

3) Construction of the Ultimate Trail Configuration

Construction and operation impacts of the Ultimate Trail Configuration, constructed as Part 3 of the optional Interim Trail, would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact BIO-11, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. Part 3 of the Interim Trail would permanently displace 1.57 acres of wildlife movement habitat, including coast live oak woodland, riparian habitat, and non-native forest.

In summary, the construction impacts would be less than significant with mitigation, but the operational impacts would be **significant and unavoidable**. The Mitigation Measures BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, and BIO-10b would be required to reduce the impact to the extent feasible, but not to a less than significant level.

Mitigation Measure BIO-2: Conduct Biological Monitoring for Sensitive Wildlife Species

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Monitoring Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Mitigation Measure BIO-10a: Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats

Mitigation Measure BIO-10b: Develop and Implement Wetland Mitigation and Monitoring Plan

Combined Effect of Interim Trail Parts 1, 2, 3

Implementation of Parts 1 and 2 would be less than significant with mitigation. However, the combined Interim Trail (Parts 1, 2, and 3) would result in the permanent loss of 2.37 acres of wildlife movement habitat. Construction and operation of the Interim Trail is likely to preclude the use of the corridor by wildlife for movement because of the overall loss of cover and shelter and the greater width of the development footprint. Therefore, the combined impact of Parts 1, 2, and 3 of the Interim Trail would be **significant and unavoidable**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would result in greater impacts than without the Interim Trail. Specifically, it would result in the loss of 0.43 acres more of wildlife movement habitat. The Proposed Project without the optional Interim Trail would permanently displace 1.94 acres, while the Proposed Project with the Interim Trail would displace 2.37 acres overall. Nonetheless, impacts from the Proposed Project, with or without the Optional Interim Trail would be significant and unavoidable.

IMPACT BIO 12 THE PROJECT WOULD CONFLICT WITH POLICIES AND ORDINANCES PROTECTING TREES, INCLUDING THE CITY OF SANTA CRUZ HERITAGE TREE ORDINANCE AND COUNTY OF SANTA CRUZ

SIGNIFICANT TREE ORDINANCE. (ULTIMATE TRAIL CONFIGURATION: SIGNIFICANT AND UNAVOIDABLE; OPTIONAL INTERIM TRAIL: SIGNIFICANT AND UNAVOIDABLE)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Project includes construction of a multipurpose trail and minor rail realignment that would result in removal of mature trees along either side of the rail corridor in Segment 9, from the San Lorenzo River Trestle to 17th Avenue. There are 682 trees defined as woody vegetation with at least one main stem larger than 4 inches at diameter breast height (DBH) identified within the rail corridor (**Table 3.3-8**). The Proposed Project: Trail next to Rail (Ultimate Trail Configuration) would result in the removal of 381 trees, as described below. This would conflict with City and County plans, policies and ordinances, which call for tree protection and replacement (described in Section 3.3.2), including but not limited to: Santa Cruz County General Plan and LCP, Section 5.10.8 Significant Tree Removal Ordinance (LCP); Santa Cruz Urban Forest Master Plan; County of Santa Cruz Significant Tree Ordinance; City of Santa Cruz General Plan, and City of Santa Cruz Heritage Tree Ordinance.

CONSTRUCTION

The Proposed Project would result in the removal of 381 trees comprising a fragmented portion of the Santa Cruz urban forest, as identified in the City General Plan/LCP and Heritage Tree Ordinance, and the County Urban Forest Master Plan. (**Table 3.3-8**). Of the trees planned for removal, 265 are native species (e.g., coast live oak, California bay laurel, madrone, wax myrtle, arroyo willow, California buckeye, etc.). A total of 107 trees planned for removal are classified as “Heritage trees” by the City of Santa Cruz or County of Santa Cruz “Significant Trees“; and of these, 47 are native Heritage or Significant trees.

Tree removal is required to construct the Ultimate Trail Configuration, which includes viaducts over several creeks, retaining walls to stabilize the adjacent hillslopes, and rail realignment (approximately 1,670 feet of tracks up to 7.5 feet to the south of the existing alignment west of 5th Avenue to slightly east of El Dorado Avenue). The Project has been carefully designed to meet the Caltrans Standards for a Class 1 bikeway, as well as CPUC requirements for a trail along the rail, while minimizing tree removal to the extent feasible. For example, the Ultimate Trail Configuration was redesigned to use viaducts, instead of retaining walls, in areas on the west and east sides of the Santa Cruz Harbor, to reduce required tree removal.

Some of the trees proposed for removal also occur within sensitive habitats including coast live oak woodland and forest, arroyo willow riparian forest, and monarch roost sites. Trees removed in these areas are protected and require mitigation even if they do not meet the City Heritage or County Significant Tree size thresholds.

The Proposed Project would remove more than half (56%) of the existing trees and associated tree canopy within Segment 9 of the rail corridor. Project construction would remove 65% of the native trees that were identified in the Project corridor, 53% of Heritage and Significant trees currently present, and 57% of native Heritage and Significant trees. Due to limited available space remaining within the corridor after construction of the Ultimate Trail Configuration, only a very limited portion of trees could be replaced on site within the rail corridor. The remaining trees would be planted elsewhere in proximity to the study area, either as urban street trees or as mitigation for sensitive habitats and wildlife movement corridors as outlined in Mitigation Measure BIO-9b, described under Impact BIO-9. Mitigation Measure BIO-9a would result in replanting trees at a minimum ratio of 1:1. Higher replacement ratios would be required for Heritage and Significant trees.

Construction activities could also threaten trees not identified for removal through construction-related disturbance. Mitigation Measures BIO-9a and BIO-9c, described under Impact BIO-9, would minimize construction in sensitive habitats, install temporary protective fencing, and include other BMPs that would protect remaining trees, saplings and mature trees to the extent feasible.

Compliance with City and County ordinances, as well as other agency permit requirements for tree replacement and implementation of Mitigation Measure BIO-9b, would result in replanting of trees at a minimum 1:1 ratio.

Due to the substantial number of trees planned for removal, including a large percentage of trees regulated by City and County ordinances, the inability to mitigate the majority of tree removal on-site, and the number of years required for trees to mature, this construction impact would conflict with City and County policies and ordinances that regulate tree removal and thus would be **significant and unavoidable**, even with the identified mitigation (Mitigation Measures BIO-9a, BIO-9b, BIO-9c**).**

Table 3.3-8 Tree Removal Required for Construction and Operation of the Proposed Project

Tree Type	Existing Trees (>4" DBH)	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)		Optional First Phase: Trail on the Rail Line (Interim Trail)[a]					
				Part 1		Part 3		Parts 1 + 3	
	Total	Number	Percent[f]	Number	Percent	Number	Percent	Number	Percent
All Trees[b]	682	381	56%	124	18%	280	41%	404	59%
Native Trees[c]	411	265	65%	59	14%	217	53%	276	67%
Heritage and Significant trees[d]	201	107	53%	51	25%	66	33%	111	55%
Native Heritage and Significant Trees[e]	83	47	57%	15	18%	37	45%	52	63%

[a] Part 1 is implementation of the Interim Trail, which includes removal of the rail track and ties and construction of the Interim Trail on the rail bed. Part 2 is demolition of the Interim Trail and rebuilding of the rail line. Part 3 is construction of the Ultimate Trail Configuration, which would be the same as described for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail.

[b] Total trees identified by the arborist in the Project corridor.

[c] Native trees are those that occur naturally without being introduced directly or indirectly by humans.

[d] City of Santa Cruz Heritage Trees and County of Santa Cruz Significant Trees are defined in Section 3.3-2. In general, Heritage trees within the City limits are greater than 14 inches in diameter and County Significant Trees are greater than 20 inches in diameter at 4.5 feet above grade.

[e] Native Heritage and Significant trees are both naturalized and of sufficient size to be regulated by the City Heritage Tree Ordinance or County Significant Tree Ordinance.

[f] The percent of trees removed are expressed for each tree type category (e.g., 265 native trees removed out of 411 native trees within the rail corridor equates to 65% of native trees removed for the Proposed Project).

OPERATION

Trail operation (use) would not result in additional impacts related to tree removal. However, as described in Section 2.5, *Project Operation and Maintenance* under *Trail Maintenance*, general trail maintenance activities include tree trimming, fallen tree removal, and weed control. The ongoing maintenance of protected and newly planted trees (including pruning, limbing, herbicide application, and other activities within the dripline of the remaining tree canopy) could result in further injury or mortality to remaining trees within the rail corridor. This impact would be reduced by prioritizing regular arboricultural tree care (pruning, root protection), including proper timing of these activities, as part of the ongoing long-term trail maintenance.

Mitigation Measure BIO-9b, described under Impact BIO-9, outlines the development of a Project-specific Biological Resources Mitigation and Management Plan (MMP), which would mitigate temporary disturbance and permanent loss of sensitive habitats and mitigate impacts to other biological resources, including all trees removed within corridor. Due the importance for both habitat and screening from the urban landscape, all trees will be replaced at a minimum 1:1 ratio. All City Heritage trees, County Significant Trees, and native trees will be replaced "in-kind" at a location and ratio to be determined by the City Forester, County Environmental Coordinator, and/or other responsible regulatory agencies. The MMP would include provisions to protect and enhance the functions and values the urban forest and the directives of the 1992 County of Santa Cruz Urban Forest Management Plan and the City of Santa Cruz General Plan (2012) which identifies the enhancement and sustainability of urban forest as a Natural Resource Conservation Goal.

Therefore, the operational impact would be **less than with mitigation** (Mitigation Measure BIO-9b).

In summary, because the identified mitigation measures would not reduce the construction impact to a less than significant level, the overall Project impact would be **significant and unavoidable** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)

The optional Interim Trail Option would occur in three parts. Part 1 (Implementation of Interim Trail) and Part 3 (Construction of the Ultimate Trail) would require the removal of 404 total trees occurring along the rail corridor. For Part 1, 124 trees would be removed to construct the 16-foot-wide Interim Trail with retaining walls and other infrastructure along the center of the rail line. Because the Interim Trail is wider than the existing rail bed, trees would be removed on either side of the trail to accommodate the Project. For Part 3, 280 additional trees would be removed to construct the 12-foot-wide Ultimate Trail Configuration. Part 2 (demolishing the Interim Trail and rebuilding the rail) would not require the removal of any trees.

1) Implementation of Interim Trail

Implementation of the Interim Trail Part 1, which includes removing the rail and constructing the Interim Trail, would result in the removal of 124 trees. It should be noted that of these 124 trees, 23 trees would need to be removed for the Interim Trail only and would not need to be removed for construction of the Ultimate Trail Configuration, as discussed under *Comparison of the Proposed Project Impact with/without the Optional Interim Trail*. This is because the 16-foot-wide Interim Trail requires retaining walls and other supporting infrastructure, which requires tree removal on the south (coastal) side of the tracks that would not be required for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*.

Of the 124 trees to be removed, a total of 59 trees are native, 51 are City Heritage or County Significant Trees, and 15 are native Heritage or Significant trees. Tree removal would be mitigated by implementing tree replacement requirements identified in the City and County ordinance, and by implementing Mitigation Measure BIO-9b, described under Impact BIO-9, which outlines the development of a Project-specific Biological Resources MMP, as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration).* Mitigation Measures BIO-9a and BIO-9c, described under Impact BIO-9, would protect remaining trees that could be disturbed by construction activities by minimizing construction in sensitive habitats, installing temporary protective fencing, and implementing BMPs that would protect remaining trees, saplings and mature trees to the extent feasible during construction.

Because implementing Part 1 of the Interim Trail includes removal of 51 Heritage and Significant trees which is approximately 25% of all trees in these categories along Segment 9, this impact would be **significant and unavoidable.** The Mitigation Measures BIO-9a, BIO-9b, BIO-9c, be required to reduce the impact to the extent feasible, but not to a less than significant level.

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2 of the optional Interim Trail) would not result in additional tree removal. However, remaining trees along the corridor could be disturbed and damaged during the Part 2 construction and demolition activities. This impact would be reduced by implementing the BMPs identified in Mitigation Measure BIO-9c. Therefore, the impact would be **less than significant with mitigation** (Mitigation Measure 9c).

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of the optional Interim Trail would be similar, albeit slightly greater, to that described in detail above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* for construction and operational impacts. Refer to the

discussion for Impact BIO-12, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. Compliance with City and County ordinances, as well as other agency permit requirements for tree replacement and implementation of Mitigation Measure BIO-9b), would result in replanting of trees at a minimum 1:1 ratio. However, due to limited available space remaining in the corridor following completion of the Ultimate Trail Configuration, the majority of tree replacement will occur off site.

Due to the substantial number of trees planned for removal, including a large percentage of trees regulated by City and County ordinances, the inability to mitigate the majority of tree removal on-site, and the number of years required for trees to mature, this construction impact would conflict with City and County policies and ordinances to regulate tree removal, even with the identified mitigation. Therefore, the impact would be **significant and unavoidable** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

Mitigation Measure BIO-9a: Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing

Mitigation Measure BIO-9b: Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation

Mitigation Measure BIO-9c: Implement Best Management Practices during Construction

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of implementing Parts 1,2,3 of the optional Interim Trail would result in the loss of 404 (59%) of all trees identified within the rail corridor, including 276 native trees, 111 Heritage or Significant trees, and 52 of native Heritage or Significant trees. Tree removal would also occur over two construction periods (Parts 1 and 3), both of which would have direct and indirect adverse effects to wildlife, nesting birds, and sensitive habitats including monarch butterfly roost sites. The impact would be **significant and unavoidable** (Mitigation Measures BIO-9a, BIO-9b, BIO-9c).

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail (Parts 1, 2, 3) would result in 404 trees removed, and the Proposed Project without the Interim Trail, would necessitate 381 trees removed. The Proposed Project with the optional Interim Trail requires an additional 23 trees be removed because the Interim Trail is wider than the Ultimate Trail Configuration. Locating the 16-foot-wide Interim Trail (which is wider than the 12-foot-wide Ultimate Trail) on the rail bed requires retaining walls and other supporting infrastructure, which requires tree removal on the south (coastal) side of the tracks.

When comparing only Part 1 of the optional Interim Trail to the Ultimate Trail Configuration (Proposed Project without the Interim Trail), the Interim Trail would remove 124 trees, which would be 37% less than the Ultimate Trail Configuration.

However, *CEQA Guidelines*, Section 15126, requires all parts or the whole of the Project be analyzed. Therefore, all three parts of the optional Interim Trail, including Part 3 (Construction of the Ultimate Trail) need to be considered. Accordingly, the Proposed Project with the optional Interim Trail would result in greater tree removal and thus greater conflict with tree protection policies and ordinances, than the Proposed Project without the Interim Trail. The impact of the Proposed Project would be **significant and unavoidable** with or without the optional Interim Trail.

3.3.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)			
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line	Parts 1, 2, 3 Combined
BIO-1. The Project could adversely affect State Endangered and Federally Threatened Santa Cruz tarplant.	**LTSM** MM BIO-1a,b MM BIO-9a,b,c	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar
BIO-2. The Project could adversely affect monarch butterfly and autumnal and/or wintering roost sites.	**SU** MM BIO-2 MM BIO-9a,b,c	**LTSM** Substantially similar, slightly less	LTS Substantially similar, less	**SU** Similar, greater	**SU** Similar, greater
BIO-3. The Project could adversely affect sensitive fish species (tidewater goby, central California coast coho salmon, and central California coast steelhead), critical habitat, and coho Essential Fish Habitat (EFH).	**LTSM** MM BIO-9a,b,c MM BIO-10a,b	**LTSM** Similar	**LTSM** Similar	**LTSM** Similar	**LTSM** Similar
BIO-4. The Project could adversely affect western pond turtle and Santa Cruz black salamander, if present.	**LTSM** MM BIO-2 MM BIO-9a,b,c MM BIO-10a,b	LTS Substantially similar, less	LTS Substantially similar, less	**LTSM** Substantially similar	**LTSM** Substantially similar
BIO-5. The Project would adversely affect sensitive and native nesting bird species during construction and operation.	**LTSM** MM BIO-2 MM BIO-5 MM BIO-9a,b,c	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)			
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line	Parts 1, 2, 3 Combined
BIO-6. Project construction could adversely affect sensitive and common roosting bat species that may use coast live oak woodland and other trees along the alignment.	**LTSM** MM BIO-2 MM BIO-6 MM BIO-9a,c	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar,
BIO-7. The Project would adversely affect San Francisco Dusky-footed woodrat.	**LTSM** MM BIO-2 MM BIO-7 MM BIO-9a,c	**LTSM** Substantially similar, less	LTS Substantially similar, less	**LTSM** Substantially similar	**LTSM** Substantially similar
BIO-8. The Project could adversely affect marine mammals, including southern sea otter.	**LTSM** MM BIO-2 MM BIO-9a,c MM BIO-10b	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
BIO-9. The Project would result in adverse effects to riparian habitat, other sensitive natural communities, and Coastal Act ESHA.	**LTSM** MM BIO-9a,b,c	**LTSM** Substantially similar	LTS Substantially similar	LTS Substantially similar	**LTSM** Similar, greater
BIO-10. The Project would result in adverse effects to palustrine emergent wetlands and aquatic/riverine habitats.	**LTSM** MM BIO-9a,b,c MM BIO-10a,b	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Substantially Similar
BIO-11. The Project would interfere with wildlife movement.	**SU** MM BIO-2 MM BIO-9a,b,c MM BIO-10a,b	**LTSM** Substantially similar, less	**LTSM** Substantially similar, less	**SU** Substantially similar	**LTSM** Substantially similar

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)			
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line	Parts 1, 2, 3 Combined
BIO-12. The Project would conflict with policies and ordinances protecting trees, including the City of Santa Cruz Heritage Tree Ordinance and County of Santa Cruz Significant Tree Ordinance.	**SU** MM BIO-9a,b,c	**SU** Similar, less	**LTSM** Substantially less	**LTSM** Substantially less	**SU** Substantially Similar, greater

The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.4 Cultural Resources

This section addresses potential impacts to cultural resources, including historical and archaeological resources, and presents a discussion of known cultural resources along the Project corridor and an evaluation of potential impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* on those resources, as well as potential impacts on unknown or undiscovered resources. A summary of the potential impacts is presented in **Table 3.4-1**.

Table 3.4-1 Summary of Project Impacts on Cultural Resources[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
CR-1. The Project may adversely affect historical resources, including the Santa Cruz Branch Rail Line.			
Ultimate Trail Configuration	Potentially Significant	CR-1a	Less than Significant
Optional Interim Trail	Potentially Significant	CR-1a CR-1b	Significant and Unavoidable
CR-2. Ground-disturbing activities during project construction may unearth or adversely impact subsurface archaeological resources.	Potentially Significant	CR-2	Less than Significant
CR-3. Ground-disturbing activities during project construction may disturb human remains.	Less than significant	None Required	Less than Significant

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.4.1 Existing Conditions

Archaeological Context

The archaeological context includes the indigenous (Native American) history prior to contact with European explorers and settlers (i.e., pre-European contact).

The Project corridor lies in the Central Coast archaeological region (Jones et al. 2007; Glassow et al. 2007), which has been defined as extending from south of San Francisco Bay to the northern edge of the California Bight, which is located at Point Conception near Santa Barbara (Jones et al. 2007:125).

The Project corridor falls within the traditional tribal territory of the Ohlone (or Costanoan) people. For a description of Ohlone ethnography, refer to Section 3.13, *Tribal Cultural Resources*.

Following Jones et al. (2007:137), the prehistoric cultural chronology for the Central Coast can be generally divided into six periods: Paleo-Indian (ca. 10000–8000 before Common Era [BCE]), Millingstone/Early Archaic (8000–3500 BCE), Early (3500–600 BCE), Middle (600 BCE–1000 Common Era [CE]), Middle-Late Transition (1000–1250 CE), and Late (1250 CE–contact [ca. 1769 CE]). For a detailed discussion of the prehistoric cultural chronology associated with the Central Coast archaeological region, refer to **Appendix F**.

The types of artifacts or resources from this period that have been discovered along the Central Coast include milling slabs, stone and bone tools, mortars and pestles, pendants and shell beads, shell and bone fish hooks, midden deposits, house pits, and cemeteries.

Post-European Contact Setting

Post-European contact history for the State of California is generally divided into three periods: Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823.

Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States and a state with the Compromise of 1850.

By the 1860s, Santa Cruz had grown into a thriving yet isolated community whose economy centered on the timber harvesting, lime production, and leather tanning. The development of local railroads beginning in the 1870s created more reliable connections to the outside world and further stimulated local industry. As established industries, especially those dependent on timber harvesting, began to fade around the turn of the twentieth century, the Southern Pacific Santa Cruz Branch Rail Line remained an important passenger route and proved instrumental in the growth of a new Santa Cruz centered on a tourist economy that fueled local growth through the 1950s.

For a detailed discussion of the post-European contact setting, refer to **Appendix F**.

Project Corridor Setting

The description of the Project corridor setting relative to cultural resources is based on the following: a California Historical Resources Information System (CHRIS) records search of the Project corridor and a 0.5-mile radius around the Project corridor at the Northwest Information Center, a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search, a review of historical aerial imagery and topographic maps, a pedestrian field survey that did not identify any archaeological resources, and the evaluation of four built environment resources located within the Project vicinity.

The Northwest Information Center records search results identified 29 previously recorded cultural resources within a 0.5-mile radius of the Project corridor. Of these, one resource, the Southern Pacific Railroad, is recorded within the Project corridor; however, it was not evaluated previously for historical resources eligibility. An additional four resources (including three built environment resources and one prehistoric archaeological site) are located adjacent to the Project corridor. Additionally, the results of the SLF search were positive for the presence of tribal sacred lands within the Project corridor.

The Santa Cruz Branch Rail Line was operated by the Southern Pacific Railroad, which later merged with Union Pacific Railroad, and was recorded on California Department of Parks and Recreation 523 Series forms and evaluated for inclusion in the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP). The California Department of Transportation Cultural Studies Office has assumed that the entire resource is eligible for the NRHP for its associations with the history of transportation and economic development in the City and County of Santa Cruz. It is therefore a historical resource for the purposes of the California Environmental Quality Act (CEQA).

There are three additional historic-period properties immediately adjacent to the Project corridor: the Park Avenue Motel/Apartments at 120–124 Hiawatha Avenue, the Pacific Gas & Electric (PG&E) Santa Cruz Service Center at 615 7th Avenue, and the Sorrento Oaks mobile home park at 800 Brommer Street. Each property was evaluated for inclusion in the NRHP and CRHR, and all three properties were found to be ineligible for listing due to a lack of historical and architectural significance. Therefore, none of these properties qualify as a historical resource pursuant to CEQA and are not discussed further in this section.

No archaeological resources (including known cemeteries or burial sites) were identified within the Project corridor as a result of the records search or during the pedestrian field survey. However, one previously recorded (though unevaluated) prehistoric site is located adjacent to the Project corridor. The site consists of a patch of dark soils measuring less than 2.5 feet, as well as seven unassociated and unmodified marine shell fragments. This prehistoric site is approximately 150 feet west/northwest from the Project corridor and has likely been partially destroyed due to development. However, Native American consultation conducted as part of the Project's Section 106 of the National Historic Preservation Act requirements indicated concerns related to the proximity of the site to the Project.

Overall, the background research, SLF results, and response from local Native American groups indicate that the general area of Santa Cruz has high sensitivity for containing Native American cultural resources. However, the direct Project footprint has been heavily disturbed by the construction of Beach Street at the west end, the extant rail line, and adjacent properties with associated utilities, such as the PG&E facilities and Simpkins Swim Center at the east end.

3.4.2 Regulatory Setting

This section describes the applicable federal, state, and local laws, ordinances, regulations, and standards governing cultural resources.

Federal

National Register of Historic Places

Authorized by Section 106 of the National Historic Preservation Act, the NRHP is the nation's official list of cultural resources worthy of preservation. The NRHP recognizes the quality of significance in American, state, and local history, architecture, archaeology, engineering, and culture present in districts, sites, buildings, structures, and objects. Per Code of Federal Regulations, Title 36, Part 60.4, a property is eligible for listing in the NRHP if it meets one or more of the following criteria:

Criterion A: Are associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B: Are associated with the lives of persons significant in our past.

Criterion C: Embody the distinctive characteristics of a type, period, or method of installation, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D: Have yielded, or may be likely to yield, information important in prehistory or history.

In addition to meeting at least one of the above designation criteria, resources must also retain integrity. The National Park Service recognizes seven aspects or qualities that, considered together, define historic integrity. To retain integrity, a property must possess several, if not all, of these seven qualities, which include location, design, setting, materials, workmanship, feeling, and association.

Certain properties are generally considered ineligible for listing in the NRHP, including cemeteries, birthplaces, graves of historical figures, properties owned by religious institutions, relocated structures, or commemorative properties. Additionally, a property must be at least 50 years of age to be eligible for listing in the NRHP. The National Park Service states that 50 years is the general estimate of the time needed to develop the necessary historical perspective to be evaluated for significance (National Park Service 1997:41). Properties that are less than 50 years must be determined to have "exceptional importance" to be considered eligible for NRHP listing.

State

California Register of Historical Resources

CEQA requires that a lead agency determine whether a project could have a significant effect on historical resources and tribal cultural resources (PRC 21074 [a][1][A]–[B]). A historical resource is a resource listed in or determined to be eligible for listing in the CRHR (Section 21084.1), a resource included in a local register of historical resources (Section 15064.5[a][2]), or any object, building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant (Section 15064.5[a][3]).

The California Public Resources Code (PRC), Section 5024.1, requires an evaluation of historical resources to determine their eligibility for listing in the CRHR. The purpose of the register is to maintain listings of the state's historical resources and to indicate which properties are to be protected from substantial adverse change. The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, as enumerated according to CEQA below:

> 15064.5(a)(3) […] Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code, Section 5024.1, Title 14 CCR, Section 4852) including the following:
>
> (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
> (2) Is associated with the lives of persons important in our past
> (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
> (4) Has yielded, or may be likely to yield, information important in prehistory or history
>
> 15064.5(a)(4) The fact that a resource is not listed in or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to Section 5020.1(k) of the Public Resources Code), or identified in an historical resources survey (meeting the criteria in Section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be an historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.
>
> 15064.5(b) A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.

In addition, if a project can be demonstrated to cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that resources cannot be left undisturbed, mitigation measures are required (PRC 21083.2[a], [b], and [c]).

PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it does one or more of the following:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- Has a special and particular quality such as being the oldest of its type or the best available example of its type
- Is directly associated with a scientifically recognized important prehistoric or historic event or person

Impacts to significant cultural resources that affect the characteristics of any resource that qualify it for the NRHP or adversely alter the significance of a resource listed in or eligible for listing in the CRHR are considered a significant effect on the environment. These impacts could result from physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired *(CEQA Guidelines*, Section 15064.5 [b][1]). Material impairment is defined as demolition or alteration in an adverse manner of those characteristics of a historical resource that convey its historical significance and that justify its inclusion or eligibility for inclusion in the CRHR (*CEQA Guidelines*, Section 15064.5[b][2][A]).

California Public Resources Code

PRC Sections 5024 and 5024.5 requires state agencies to take action to ensure preservation of state-owned historical resources, defined as those eligible for or listed in the NRHP or as California Landmarks, under their jurisdictions. Under PRC Section 5024, state agencies must provide notification to the State Historic Preservation Office for any project having the potential to affect state-owned historical resources to request their comments and concurrence on the project. If the Project may adversely affect state-owned historical resources, the State Historic Preservation Office and the head of the state agency with jurisdiction over the resource will consult on measures to avoid or eliminate adverse effects on the resource.

Section 5097.5 of the California PRC states:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this PRC section, “public lands” means lands owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, local agencies are required to comply with PRC Section 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

Codes Governing Human Remains

The disposition of human remains is governed by California Health and Safety Code, Section 7050.5, and PRC Sections 5097.94 and 5097.98, and falls within the jurisdiction of the NAHC. If human remains are discovered, the County Coroner must be notified within 48 hours, and there should be no further disturbance to the site where the remains were found. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to PRC Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native American so they can inspect the burial site and make recommendations for treatment or disposal.

Any human remains found on California State Parks land must be treated in accordance with California State Parks policies, including the involvement of the California State Parks District Tribal Liaison in Native American notification and consultation.

Coastal Act

The Project corridor is located in the Coastal Zone. According to PRC Section 30244, "where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required."

Local

Santa Cruz County General Plan

The Conservation and Open Space Element of the Santa Cruz County General Plan (1994) includes objectives and policies to protect archaeological and historical resources. Key policies from the General Plan pertaining to cultural resources are listed below:

- **Policy 5.19.1 Evaluation of Native American Sites.** Protect all archaeological resources until they can be evaluated. Prohibit any disturbance of Native American Cultural Sites without an appropriate permit. Maintain the Native American Cultural Sites ordinance.
- **Policy 5.19.2 Site Surveys.** Require an archaeological site survey (surface reconnaissance) as part of the environmental review process for all projects with very high site potential as determined by the inventory of archaeological sites, within the Archaeological Sensitive Areas, as designated on General Plan and LCP [Local Coastal Program] Resources and Constraints Maps filed in the Planning Department.
- **Policy 5.19.3 Development Around Archaeological Resources.** Protect archaeological resources from development by restricting improvements and grading activities to portions of the property not containing these resources, where feasible, or by preservation of the site through project design and/or use restrictions, such as covering the site with earth fill to a depth that ensures the site will not be disturbed by development, as determined by a professional archaeologist.
- **Policy 5.19.4 Archaeological Evaluations.** Require the applicant for development proposals on any archaeological site to provide an evaluation, by a certified archaeologist, of the significance of the resource and what protective measures are necessary to achieve General Plan and LCP Land Use Plan objectives and policies.

- **Policy 5.19.5 Native American Cultural Sites.** Prohibit any disturbance of Native American Cultural Sites without an archaeological permit which requires, but is not limited to, the following:

    (a) A statement of the goals, methods, and techniques to be employed in the excavation and analysis of the data, and the reasons why the excavation will be of value.

    (b) A plan to ensure that artifacts and records will be properly preserved for scholarly research and public education. (c)A plan for disposing of human remains in a manner satisfactory to local Native American Indian groups. Policy 5.20.3 Development Activities. For development activities on property containing historic resources, require protection, enhancement, and/or preservation of the historic, cultural, architectural, engineering or aesthetic values of the resources as determined by the Historic Resources Commission. Immediate or substantial hardship to a project applicant shall be considered in establishing project requirements.

- **Policy 5.20.4 Historic Resources Commission Review.** Require that applicants for development proposals on property containing a designated Historic Resource submit plans for the protection and preservation of the historic resource values to the Historic Resources Commission for their review and approval; require an evaluation and report by a professional historian or a cultural resources consultant when required by the Commission.

- **Policy 5.20.5 Encourage Protection of Historic Structures**. Encourage and support public and private efforts to protect and restore historic structures and continue their use as an integral part of the community.

Santa Cruz County Municipal Code

Title 16, *Environmental and Resource Protection*, of the County's Municipal Code outlines criteria for Native American cultural studies (Chapter 16.40), historic preservation (Chapter 16.42), and paleontological resource protection (Chapter 16.44). These codes also serve as the implementing ordinance of the Local Coastal Program.

Chapter 16.40 defines when archaeological surveys and reports are required and the necessary actions when Native American cultural sites or human remains are discovered during the review of a proposed project or during excavation or other ground-disturbing activities. Chapter 16.42 defines the significance and designation of protected historic resources on the County's Inventory of Historic Resources and development procedures for designated historic resources. Chapter 16.44 describes requirements for paleontological assessments and reports, permitting requirements for projects on the site of paleontological resources, and required actions when paleontological resources are discovered during excavation or other groundbreaking activities.

City of Santa Cruz General Plan

Chapter 2, *Historic Preservation, Arts and Culture*, of the City's General Plan includes one goal and several policies related to the protection and preservation of archaeological and historical resources, provided below:

- **Goal HA1** Cultural resources protected and preserved.
    - **Policy HA1.1** Preserve (or where not possible, responsibly manage) archaeological and paleontological sites important to the community's heritage.
    - **Policy HA1.2** Protect (or where not possible, responsibly manage) sensitive archaeological and paleontological resources as early in the land-use planning and development process as possible.

- **Policy HA1.3** Seek and consider input of descendent community and historical organizations on the protection of archeological resources.
- **Policy HA1.4** Manage the discovery of human remains and the protection of archaeological deposits in accordance with local, State, and federal requirements.
- **Policy HA1.5** Require that archaeological work within the city be performed by a qualified archaeologist.
- **Policy HA1.6** Provide opportunities for the interpretation of paleontology and prehistoric and historical archaeology in the city.
- **Policy HA1.7** Encourage and facilitate the protection and preservation of traditional cultural properties.
- **Policy HA1.8** Protect, encourage, and develop guidelines for restoring and rehabilitating historic or architecturally significant buildings, sites, and landmarks.
- **Policy HA1.9** Require compatible development within historic districts and on sites outside but immediately adjacent to those districts. Cf. HA1.8.2 and LU3.9.4.
- **Policy HA1.10** Promote public awareness and appreciation of the city's historic and architectural resources. Cf. HA4.5.4, ED1.7, ED1.7.3.
- **Policy HA1.11** Provide incentives for the listing and rehabilitation of architecturally-significant buildings, sites, and landmarks.

City of Santa Cruz Municipal Code

Chapter 24.12, *Community Design*, of the City's Municipal Code contains provisions that pertain to the protection of archaeological and historical resources. Specifically, Part 5, *Historic Preservation*, of the City's Municipal Code seeks to protect, enhance, perpetuate, and use structures, districts, lands, and neighborhoods of historic, archaeological, architectural, and engineering significance, located within the City of Santa Cruz, that are of cultural and aesthetic benefit to the community. Section 24.12.430 outlines the standards related to the protection of archaeological resources, Section 24.12.431 discusses the protection of paleontological resources, and Sections 24.12.420, 24.12.440, and 24.12.445 pertain to historic building, landmarks, and districts.

3.4.3 Methodology and Significance Thresholds

Methodology

The investigation to determine potential impacts to cultural resources consisted of the following: a CHRIS records search of the Project corridor and a 0.5-mile radius of the Project corridor at the Northwest Information Center, an NAHC SLF search, a review of historical aerial imagery and topographic maps, a pedestrian field survey, and the evaluation of one built environment resource located within the Project corridor.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of cultural resources and the other environmental topics. Thus, the thresholds presented below correspond with the questions in the Appendix G Initial Study checklist. They also reflect the operative language

of pertinent provisions of CEQA and the *CEQA Guidelines* (i.e., PRC 21083.2 and 21084.1 and *CEQA Guidelines*, Section 15064.5).

For the purposes of this Environmental Impact Report, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Cause a substantial adverse change in the significance of a historical resource pursuant to 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.

Direct impacts can be assessed by identifying the types and locations of proposed development, determining the exact locations of cultural resources within the Project vicinity, assessing the significance of the resources that may be affected, and determining the appropriate mitigation. Removal, demolition, or alteration of historical resources can permanently impact the historic significance of an archaeological site, structure, or historic district.

The State Legislature, in enacting the CRHR, amended CEQA to clarify which properties are significant and which project impacts are considered significantly adverse. A project with an effect that may cause a substantial adverse change in the significance of a historical resource is a project that may have significant effect on the environment (*CEQA Guidelines*, Section 150645[b]). A substantial adverse change in the significance of a historical resource means demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (*CEQA Guidelines*, Section 150645[b][1]).

The *CEQA Guidelines*, Section 150645, further states that "the significance of an historical resource is materially impaired when a project . . . demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in the California Register . . . local register of historic resources . . . or its identification in an historic resources survey." As such, the test for determining whether the Project would have a significant impact on identified historic resources is whether it would materially impair physical integrity of the historic resource such that it could no longer be listed in the CRHR or a local landmark program.

3.4.4 Project Impact Analysis

Threshold A:	Cause a substantial adverse change in the significance of a historical resource pursuant to *CEQA Guidelines*, Section 15064.5.

Impact CR-1 THE PROJECT MAY ADVERSELY AFFECT HISTORICAL RESOURCES, INCLUDING THE SANTA CRUZ BRANCH RAIL LINE. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: SIGNIFICANT AND UNAVOIDABLE)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

The cultural resources documentation prepared for the Project identified one historical resource within the Project corridor, an approximately 2-mile segment of the Santa Cruz Branch Rail Line. Although an evaluation of the full length of the 22-mile rail line was beyond the scope of this

analysis, the California Department of Transportation Cultural Studies Office has assumed that the entire resource is eligible for the NRHP for its associations with the history of transportation and economic development in the City and County of Santa Cruz. Therefore, the Santa Cruz Branch Rail Line is a historical resource for the purposes of this CEQA analysis for Coastal Rail Trail Segments 8 and 9.

The Project would include fencing and guardrails along the sides of bridges, viaducts, walls, and other raised trail features where needed for trail user safety and fencing between the trail and tracks as necessary in accordance with the Monterey Bay Sanctuary Scenic Trail Network Master Plan. The fencing would be 4 feet, 8 inches, in height and would allow wildlife to pass. In accordance with the Federal Railroad Administration guidelines, an 8.5- to 10-foot offset separation from the centerline of the railroad to the edge of the trail would be maintained along the trail.

The Project includes realigning 1,670 linear feet of rail up to 7.5 feet southward within the Santa Cruz County Regional Transportation Commission-owned rail corridor to accommodate both the railroad tracks and the trail. The track realignment would extend from approximately 500 feet west of 7th Avenue to approximately 1,100 feet east of 7th Avenue, and it would involve removal of the rail and installation of new Class III rail consistent with the existing rail. Additionally, the placement of a trail and fencing immediately adjacent to the rail line would introduce a new visual feature and use that would alter the setting of the Santa Cruz Branch Rail Line. As a result, the Project would cause the partial material impairment of the Santa Cruz Branch Railroad. A partial material impairment is defined by CEQA as the alteration in an adverse manner of historically significant physical characteristics. Realignment of the rail would be a relatively small portion of the overall rail that would not change the overall physical characteristics of the resource. Therefore, rail realignment and fencing would constitute a partial material impairment.

As described in Section 2.4, *Project Characteristics*, the Project includes educational signage. Mitigation Measure CR-1a would require the signage include historic and educational interpretive exhibits and be placed along the trail at strategic locations to offer a variety of information to trail users about the cultural history of the area. The intent of these exhibits is to educate visitors and residents about current issues and stewardship, and to take advantage of the unique opportunity offered by the Monterey Bay Sanctuary Scenic Trail Network to physically connect the communities in the County to one another and create ties to its culture and history (RTC 2014). Although the introduction of these exhibits would introduce an additional modern element to the setting, they would provide insight into the history of the rail line and its construction and design. The exhibits would compensate for the partial material impairment of the Santa Cruz Branch Rail Line by providing users with insight into the significance of the resource in a manner that may not be readily available otherwise. Therefore, impacts would be **less than significant with mitigation** (Mitigation Measure CR-1a).

Mitigation Measure CR-1a: Install Historical Interpretive Exhibits along Trail prior to Trail Use

Consistent with Monterey Bay Sanctuary Scenic Trail Network Master Plan Design Guidelines, the City and/or County, depending on the jurisdiction, shall develop an on-site interpretive exhibit with materials concerning the history and engineering features of the Santa Cruz Branch Rail Line and its character-defining features. Prior to trail use, the exhibits shall be installed at key locations along the trail to specifically highlight the importance of the Santa Cruz Branch Rail Line. Interpretation of the site's history shall be supervised by an architectural historian or historian who meets the Secretary of the Interior's Professional Qualification Standards, and may engage additional consultants to develop the display. There shall be at least two major exhibits and three minor

exhibits, including signage and salvaged materials (e.g., small segments of original ballast, ties, and rail) to be placed intermittently along the trail route as space allows and as approved by the lead agency and Santa Cruz County Regional Transportation Commission. The historical interpretive exhibits shall be designed in conjunction and compatible with interpretive exhibits for nature education and exhibits along other rail trail segments for continuity.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the Interim Trail (Part 1) would remove the railroad tracks and ties and construct the multi-use trail on the rail bed. Therefore, implementation of the Interim Trail would result in the demolition and removal of the 1.6 miles comprising Segment 9 of the Santa Cruz Branch Rail Line within the Project corridor. It would not result in the removal of tracks in Segment 8, which are used seasonally by Roaring Camp Railroad as it travels from the community of Felton to the Boardwalk.

Under CEQA, the substantial adverse change in the significance of a historical resource is defined as the physical demolition, destruction, or alteration of the resource or its immediate surroundings such that it no longer conveys the reasons for its significance. The railroad tracks and ties are considered character-defining features and are essential to reflect the historical significance of the Santa Cruz Branch Rail Line in the early transportation history of Santa Cruz. Because the removal of these features would result in the material impairment of the Santa Cruz Branch Rail Line, impacts from the Interim Trail would be significant. In addition to Mitigation Measure CR-1a requiring educational signage, Mitigation Measure CR-1b would be required for the Interim Trail to document the historic rail line prior to removal. However, no mitigation measures are available to reduce impacts below the level of significance because the Interim Trail would remove a historical resource. Impacts would therefore be **significant and unavoidable**.

Mitigation Measure CR-1b: Prepare Historic Documentation Package prior to Rail Removal (Interim Trail Only)[1]

Prior to removal of the rail line, the rail line owner shall work with the City and/or County, depending on the jurisdiction, to undertake Historic American Engineering Survey documentation of the Santa Cruz Branch Railroad. The documentation shall generally follow the Historic American Engineering Survey Level III requirements and include digital photographic recordation of the line including all character-defining-features, a detailed historic narrative report, and a compilation of historic research. The documentation shall be undertaken by a qualified professional who meets the standards for history or architectural history as set forth by the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61). The original archival-quality documentation shall be offered as donated material to the University of California Santa Cruz library, Santa Cruz Public Library, Santa Cruz Museum of Art and History, and Santa Cruz County Regional Transportation Commission where it would be available for current and future generations.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) would not impact any historical resources. The Santa Cruz Branch Rail Line would no longer be extant, and there are no other historical resources within the Project vicinity that would be impacted by the removing of the

[1] This mitigation measure is included verbatim from the MBSST Network Master Plan Environmental Impact Report or has been refined or modified to address site-specific concerns associated with Segments 8 and 9.

Interim Trail and rebuilding of the rail line. Although the rebuilding of the rail line would reintroduce a rail line into the Project corridor, the new rail line may not follow the exact alignment of the former Santa Cruz Branch Rail Line and would be constructed using modern materials. As such, the new rail line would not be a replacement for the historic rail line removed as part of the Interim Trail. Impacts would be **less than significant**.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of the Interim Trail would result in the construction of a new trail within the right-of-way of the Santa Cruz Branch Rail Line, alongside the tracks reconstructed as Part 2 of the Interim Trail. Construction of the trail within the right-of-way would cause changes to the setting of the Santa Cruz Branch Rail Line by introducing a new visual feature. However, Mitigation Measures CR-1a and CR-1b would be implemented with Part 1 of the Interim Trail and would already reduce impacts to the maximum extent feasible. Therefore, impacts would be **less than significant**.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of implementing the optional Interim Trail (Parts 1, 2, and 3) would involve the removal of the historic physical features that make up the Santa Cruz Branch Rail Line, a historical resource under CEQA, during Part 1. Although the rebuilding of the rail line (Part 2) would reintroduce railroad to the Project corridor, it may not follow the exact alignment of the Santa Cruz Branch Rail Line and would be constructed using modern materials. Although the demolition of the Interim Trail (Part 2) and construction of the Ultimate Trail Configuration (Part 3) would have less than significant impacts, removal of the rail line (Part 1) and therefore the combined effect of the optional Interim Trail would be **significant and unavoidable** due to removal of the Santa Cruz Branch Railroad.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have a greater level of impact on a historical resource than the Project without the optional Interim Trail. The optional Interim Trail would require removal and demolition of a large section (8,448 linear feet) of the Santa Cruz Branch Rail Line, which is considered a historical resource. Impacts from the optional Interim Trail would be **significant and unavoidable**, even with implementation of Mitigation Measures CR-1a and CR-1b.

In comparison, the Project without the Interim Trail would construct the trail adjacent to the Santa Cruz Branch Rail Line and would preserve the rail line. Although the Project would realign 1,670 feet of the rail southward, which involves removal of the rail and installation of new Class III rail consistent with the existing rail, it would be a relatively small portion of the overall rail and would not change the overall physical characteristics of the resource, as described under the *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)* above. Mitigation Measure CR-1a would reduce impacts associated with the Project by providing interpretive materials that would help to convey the significance of the resource. As such impacts to historical resources from the Project without the optional Interim Trail would be **less than significant with mitigation**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. The East Harbor Connection would not create a

substantial adverse change in the significance of a historical resource. Impacts would be **less than significant**.

Threshold B:	Cause a substantial adverse change in the significance of an archaeological resource pursuant to *CEQA Guidelines*, Section 15064.5.

Impact CR-2 GROUND-DISTURBING ACTIVITIES DURING PROJECT CONSTRUCTION MAY UNEARTH OR ADVERSELY IMPACT SUBSURFACE ARCHAEOLOGICAL RESOURCES. (ULTIMATE RAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

The cultural resources records search performed for the Project did not identify previously recorded archaeological resources within the Project corridor. However, one previously recorded (though unevaluated) prehistoric site is located adjacent to the Project corridor. Because this resource is over 150 feet from the Project corridor and has likely been destroyed by development, the Project would not impact this resource. Results of the field survey also did not identify any archaeological resources, and the direct Project footprint has been heavily disturbed by the construction of Beach Street, the extant rail line, and adjacent properties with associated utilities, such as PG&E facilities and a community pool facility. However, background research, the positive SLF results received from the NAHC, and the response from local Native American groups indicate that the general area of Santa Cruz has a high sensitivity for containing Native American habitation sites. Therefore, there would be the potential to uncover unanticipated archaeological resources during construction ground-disturbing activities.

Excavation necessary for construction of the Project and as-needed utility trench work would extend to a maximum of 6 feet below current ground surface. Pilings required for the viaducts would be drilled up to 20 feet below current ground surface. Construction of the Project would result in ground disturbance that could potentially disturb unknown buried archaeological sites.

For the City, the unanticipated discovery of archaeological resources has specific provisions for treatment in Chapter 24.12 of the City's Municipal Code. Specifically, Section 24.12.430.5 states that if any person exercising a development permit or building permit discovers any artifact or any other object that reasonably appears to be evidence of an archaeological/cultural resource during ground-disturbing activities, they will immediately cease all work on the Project; stake the area of discovery using stakes that are no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery; notify the City's Planning Director of the discovery; and grant permission to the Planning Director to enter onto the property and to take the actions consistent with the City's Municipal Code, Section 24.12.430.

Additionally, the City's Municipal Code, Section 24.12.430.7, states that if any artifacts are discovered, the Planning Director shall implement an on-site inspection of the property to be made in order to determine whether the discovery is of an archaeological resource or cultural resource. If the discovery is determined to be an archaeological or cultural resource, the City's Municipal Code, Section 24.12.430.9, states that the Planning Director shall notify the property owner that no further excavation or development may take place until a mitigation plan or other measures have been approved by the director for the protection of the site. The City's Municipal Code, Section 24.12.430.10, states that the property owner or their agent shall prepare any required mitigation plan that shall include conditions necessary or appropriate for the protection of the resource, including but not limited to conditions on the resumption of work, redesign of the Project, or other

conditions deemed appropriate by the Planning Director. The director shall review the mitigation plan to ensure proper protection of the resource shall authorize the resumption of work in conformance with the mitigation plan once it is finalized.

For the County, the unanticipated discovery of archaeological resources has specific provisions for treatment in Chapter 16.40 of the County's Municipal Code. Specifically, Section 16.40.040 states that any property owner who, at any time in the preparation for or process of excavating or otherwise disturbing the ground, discovers any artifact or other evidence of a Native American cultural site that reasonably appears to exceed 100 years of age, shall immediately cease and desist from all further excavations and disturbances within 200 feet of the discovery; arrange for staking completely around the area of discovery by visible stakes no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery; notify the planning director; and grant the Planning Director permission to enter onto the property and to take action.

Compliance with the Chapter 24.12 of the City's Municipal Code and Chapter 16.40 of the County's Municipal Code, depending on where resources are discovered, would reduce impacts to archaeological resources. However, while the ordinances address actions to be taken if archaeological resources are encountered during ground disturbance and the potential development of a mitigation plan, there is still the potential for the Project to impact unanticipated cultural resources because the ordinances do not address the evaluation of these resources. Therefore, mitigation is required to properly evaluate discovered archaeological resources. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measure CR-2).

Mitigation Measure CR-2: Implement Protocol for Unanticipated Discovery of Cultural Resources

In the event that archaeological resources are unexpectedly encountered during ground-disturbing construction activities, the construction contractor shall halt work within 50 feet of the find, and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the find. If the find is determined by the qualified archaeologist to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the find. If necessary, archaeological testing for California Register of Historical Resources eligibility shall be completed. If the discovery proves to be eligible for the California Register of Historical Resources and impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the deposit, per the requirements of California Public Resources Code, Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The City and/or County depending on the jurisdiction shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the CHRIS, per California Public Resources Code, Section 15126.4(b)(3)(C).

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Excavation for removal of the rail and construction of the Interim Trail (Part 1) would be up to 6 feet. Impacts to archaeological resources for implementation of the Interim Trail would therefore be similar to the impacts described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. There are no known archaeological sites located within the Interim Trail alignment. However, there is always the possibility during ground-disturbing work that unknown archaeological resources may be uncovered. Compliance with the Chapter 24.12 of the City's Municipal Code and Chapter 16.40 of the County's Municipal Code and implementation of Mitigation Measure CR-2, as described above to properly evaluate discovered archaeological resources, would reduce impacts to unknown archaeological resources. Therefore, impacts would be **less than significant with mitigation** (Mitigation Measure CR-2).

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) would also involve ground-disturbing activities up to 6 feet deep. Impacts to archaeological resources during this phase would be similar to the impacts described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. There are no known archaeological sites located within the Interim Trail alignment. However, during removal of the trail and rebuilding the rail, there would be ground-disturbing activity that has the potential to unearth unknown archaeological resources. Compliance with Chapter 24.12 of the City's Municipal Code and Chapter 16.40 of the County's Municipal Code and implementation of Mitigation Measure CR-2 would reduce impacts to unknown archaeological resources by properly evaluating the discovered archaeological resources. Therefore, impacts would be **less than significant with mitigation** (Mitigation Measure CR-2).

3) Construction of the Ultimate Trail Configuration

Impacts from the construction of the Ultimate Trail Configuration as Part 3 of the Interim Trail would be similar to that described above for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Construction of the Ultimate Trail Configuration involve excavation up to 6 feet deep and drilling piles up to 20 feet deep and therefore would have the potential to unearth previously undiscovered archaeological resources. Mitigation Measure CR-2 would reduce this impact to less than significant by properly evaluating the discovered archaeological resources. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measure CR-2).

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of implementing optional Interim Trail Parts 1 and 2 would involve three instances of ground disturbance. While no known archaeological sites are located within the Project corridor, there is always the possibility of unearthing previously unknown archaeological sites during ground-disturbing activities for construction. With multiple phases of ground-disturbing work involved with the Interim Trail, the likelihood of discovering unknown archaeological sites would increase, and impacts would be potentially significant. During each construction period, compliance with Chapter 24.12 of the City's Municipal Code and Chapter 16.40 of the County's Municipal Code and implementation of Mitigation Measure CR-2 would reduce the potential impacts to unknown archaeological resources. Impacts would be **less than significant with mitigation** (Mitigation Measure CR-2).

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts on archaeological resources. Both scenarios would require ground-disturbing activities that have the possibility of unearthing previously unknown archaeological resources. However, the optional Interim Trail would involve two additional phases of construction and ground-disturbing activity as compared to the Proposed Project without the Interim Trail. Therefore, impacts from the Proposed Project with the Interim Trail would be greater when compared to the Proposed Project without the Interim Trail. Under either scenario, the impact would be reduced to less than significant by complying with Chapter 24.12 of the City's Municipal Code and Chapter 16.40 of the County's Municipal Code and by implementing Mitigation Measure CR-2 for the unanticipated discovery of cultural resources. Impacts would be **less than significant with mitigation** (Mitigation Measure CR-2).

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. The impact of implementing the East Harbor Connection would be similar to the impact described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the optional Interim Trail. Due to ground-disturbing work, the East Harbor Connection would have the potential to unearth unknown archaeological resources. This impact would be reduced to less than significant with compliance with Chapter 24.12 of the City's Municipal Code, Chapter 16.40 of the County's Municipal Code, and implementation of Mitigation Measure CR-2 for the unanticipated discovery of cultural resources. Impacts would be **less than significant with mitigation** (Mitigation Measure CR-2).

Threshold C:	Disturb any human remains, including those interred outside of dedicated cemeteries.

Impact CR-3 GROUND-DISTURBING ACTIVITIES DURING PROJECT CONSTRUCTION MAY DISTURB HUMAN REMAINS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Northwest Information Center records search did not identify any known cemeteries or burial sites on or within a 0.5-mile radius of the Project corridor. The corridor has been heavily disturbed by construction. However, the results of the SLF search for the Project were positive for the presence of Native American sacred lands, and the background research and Section 106 Native American consultation conducted for the Project indicated that the general Project vicinity is sensitive for Native American sites.

It is estimated that excavation necessary for construction of the Project and as-needed utility trench work would extend to a maximum of 6 feet below the current ground surface. Pilings required for the retaining walls and viaducts would be up to 20 feet deep. There is always potential for previously unrecorded or unidentified human remains to exist below ground surface. Grading and excavation activities for the Project would have the potential to unearth and disturb previously unidentified human remains, if present.

Human burials have specific provisions for treatment in Chapter 24.12 of the City's Municipal Code, Chapter 16.40 of the County's Municipal Code, and PRC Section 5097. Additionally, California Health and Safety Code, Sections 7050.5, 7051, and 7054, contain specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial

remains and protects them from disturbance, vandalism, or destruction. PRC Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and establishes the NAHC as the entity to resolve any related disputes.

If human remains are found, California Health and Safety Code, Section 7050.5, states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. In the event of an unanticipated discovery of human remains, Section 16.40.040 of the County's Municipal Codes requires that all excavation cease within 200 feet of the find. The County Coroner must be notified immediately. If the human remains are determined to be Native American, the coroner would notify the NAHC, which would determine and notify a most likely descendant. The most likely descendant must complete the inspection of the site within 48 hours of being granted access to the site and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Compliance with the City's Municipal Code, the County's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, would reduce potential impacts to unknown human remains to **less than significant**. No additional mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

It is estimated that excavation necessary for removal of the rail and construction of the Interim Trail and as-needed utility trench work (Part 1) would be up to 6 feet deep. The Project corridor is not known to contain human remains, and the area has been previously disturbed by the construction of the Santa Cruz Branch Railroad and pedestrian or bicycle transportation. However, the discovery of human remains is always a possibility during ground-disturbing activities. Compliance with the City's Municipal Code, the County's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, would reduce potential impacts to unknown human remains to **less than significant**. No additional mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) would involve ground-disturbing activities up to 6 feet deep. The Project corridor is not known to contain human remains, and the area has been previously disturbed by the construction of the Santa Cruz Branch Railroad and pedestrian or bicycle transportation. However, the discovery of human remains is always a possibility during ground-disturbing activities. Compliance with the City's Municipal Code, the County's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, would reduce potential impacts to unknown human remains to **less than significant**. No additional mitigation is required.

3) Construction of the Ultimate Trail Configuration

Impacts from the construction of the Ultimate Trail Configuration as Part 3 of the Interim Trail would be similar to that described above for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* in its entirety. Compliance with the City's Municipal Code, the County's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, would reduce potential impacts to unknown human remains to **less than significant**. No additional mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of implementing the optional Interim Trail would involve three instances of ground disturbance. The Project corridor is not known to contain human remains, and the area has been previously disturbed by the construction of the Santa Cruz Branch Rail Line and other adjacent properties with associated utilities. However, the discovery of human remains is always a possibility during ground-disturbing activities. All three phases of the optional Interim Trail would be required to comply with the City's Municipal Code, the County's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, to ensure impacts to unknown human remains would be **less than significant**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts for unanticipated discovery of human remains. Both scenarios would require ground-disturbing activities that have the possibility of unearthing previously unknown human remains. However, the Interim Trail would involve two additional phases of construction and ground-disturbing activity as compared to the Project. Therefore, impacts from the Project with the Interim Trail would be greater compared with the Project without the Interim Trail. However, under either scenario, the construction contractor is required to comply with the County's Municipal Code, the City's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, for the protection of human remains. Therefore, impacts to unknown human remains are **less than significant**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Grading and excavation activities would have the potential to unearth and disturb previously unidentified human remains, if present. As for the rest of the Project, compliance with the City's Municipal Code, the County's Municipal Code, PRC Section 5097.98, and California Health and Safety Code, Section 7050.5, is required for the protection of unknown human remains. The impact would be **less than significant**.

3.4.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)			
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line	3) Construction of the Ultimate Trail Configuration
CR-1. The Project may adversely affect historical resources, including the Santa Cruz Branch Rail Line.	**LTSM** MM CR-1a	**SU** More due to the removal of the Santa Cruz Branch Rail Line MM CR-1a MM CR-1b	LTS MM CR-1a	LTS MM CR-1a	LTS Slightly less[b]
CR-2. Ground-disturbing activities during project construction may unearth or adversely impact subsurface archaeological resources.	**LTSM** MM CR-2	**LTSM** MM CR-2 Substantially similar	**LTSM** MM CR-2 Substantially similar	**LTSM** MM CR-2 Substantially similar	**LTSM** MM CR-2 Similar, but slightly greater
CR-3. Ground-disturbing activities during project construction may disturb human remains.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar	LTS Similar, but slightly greater

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

[b] The Ultimate Trail Configuration as Part 3 of the optional Interim Trail would have a slightly less impact on historical resources than the Proposed Project (Ultimate Trail Configuration), without the optional Interim Trail because the rail (the historical resource) would already be removed.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.5 Geology and Soils

This section analyzes the temporary and long-term impacts on the geologic stability of the Project corridor and the exposure of trail users to seismic and geologic hazards as a result of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)*. The potential impacts of the Project related to existing geologic, seismic, and soil conditions and paleontological resources are evaluated in this section. **Table 3.5-1** presents a summary of potential impacts related to geology and soils.

Table 3.5-1 Summary of Project Impacts on Geology and Soils[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
GEO-1. The Project would not exacerbate the existing exposure of people or structures to risks from strong seismic ground shaking.	Less than Significant	None Required	Less than Significant
GEO-2. The Project may exacerbate exposure of the public to liquefaction or landslide hazards and may be located on a geological unit or soil that would become unstable as a result of lateral spreading, landslides, and liquefaction.	Less than Significant	None Required	Less than Significant
GEO-3. The Project may result in substantial soil erosion or loss of topsoil.	Less than Significant	None Required	Less than Significant
GEO-4. The Project would not exacerbate the existing risk to life or property resulting from expansive soils.	Less than Significant	None Required	Less than Significant
GEO-5. Ground-disturbing activities during Project construction may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Potentially Significant	GEO-5	Less than Significant

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.5.1 Existing Conditions

Regional Setting

Santa Cruz County (County) is located in the Coast Range Geomorphic Province. This province is characterized by parallel northwest-trending mountain ranges formed over the past 10 million years or less by active uplift as a result of the complex tectonics of the San Andreas Fault/plate boundary system (CGS 2002). The County is bounded to the north by San Mateo County, to the east by the crest of the Santa Cruz Mountains, to the south by the Pajaro River (Monterey County line), and to the west by the Pacific Ocean (Monterey Bay). Steep coastal bluffs, deep mountain canyons, and river valleys characterize the County. The following discussion describes existing geologic formations, seismicity, and soil stability in the region. Corridor-specific geology is described under *Paleontological Resources*.

Geologic Formations and Seismicity

The Santa Cruz Mountains consist predominantly of marine sedimentary rocks of Paleocene to Pliocene age and nonmarine sediments of Pleistocene and Holocene age that overlay a granitic and metamorphic basement from the Cretaceous period or older (RTC 2013). Southwest of the San Andreas Fault and northeast of the San Gregorio Fault in Santa Cruz and San Mateo Counties is one of the most complete Tertiary rock sections in the California Coast Ranges (Clark 1981). A succession of sandstone and mudstone units overlays a Salinian basement complex of granitic and older metasedimentary rocks and ranges in age from Paleocene to Pliocene and has a composite thickness of as much as 7,390 meters. This Tertiary section is divisible into four sedimentary rock sequences that are virtually continuous, each of which is bounded by unconformities of regional extent. Resting on the basement complex, the oldest sequence consists of erosional remnants of the Locatelli Formation of Paleocene age. The next younger sequence ranges from early Eocene to early Miocene age and consists of the Butano Sandstone, San Lorenzo Formation, Zayante Sandstone, Vaqueros Sandstone, and Lambert Shale.

The two younger sequences are the products of two separate and successive marine cycles of sedimentation (Clark 1981). The older cycle was a middle Miocene event that produced a widely transgressive basal sandstone unit, the Lompico Sandstone, and an overlying organic mudstone unit, the Monterey Formation. The younger cycle was initiated in late Miocene time and likewise produced a transgressive basal sandstone unit, the Santa Margarita Sandstone, and an overlying siliceous mudstone unit, the Santa Cruz Mudstone. The basal sandstone beds of each of these two sequences were deposited in a near-shore, shallow-marine environment, whereas the overlying mudstone beds were laid down in deeper water. A later and shallower phase of the younger cycle is recorded by the Purisima Formation of Pliocene age.

The San Andreas Fault, the Zayante-Vergeles Fault, the San Gregorio Fault zone, and the Monterey Bay-Tularcitos Fault zone are the major faults in the County. These faults are associated with Holocene activity (movement in the last 11,000 years) and are considered to be active (CGS 2010) Locations of major regional faults are shown on **Figure 3.5-1**. Southwest of the San Andreas Fault, the older sedimentary rocks in the California Coast Ranges are moderately to strongly deformed, with steep-limbed folds and several generations of faults associated with uplift of the Santa Cruz Mountains. Along the coast, the ongoing tectonic activity is most evident in the gradual uplift of the coastline as indicated by the series of uplifted marine terraces that have been cut along coastline (City of Santa Cruz 2011).

The County of Santa Cruz Local Hazard Mitigation Plan 2017–2022 states that, based on historical evidence, the entire County is vulnerable to ground shaking from earthquakes (Santa Cruz County 2017). The epicenter of the Loma Prieta earthquake in October 1989, the most intense to strike California since 1906, was located on the San Andreas Fault, approximately 10 miles east–northeast of Santa Cruz.

Soils and Soil Conditions

Almost all of the soils in the County are classified as belonging to the Mollisols soil order. Mollisols are characterized by a thick, dark surface horizon and are the most extensive soil order in the United States (Global Rangelands 2018). The soils are base-rich throughout and therefore are fertile agricultural soils (NRCS 2018). Mollisols characteristically form under grass in climates with moderate to pronounced seasonal moisture deficit.

Soil liquefaction occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus becoming similar to quicksand. Lateral spreading can occur when a liquefied soil moves toward a free slope face during the cyclic earthquake loading. Liquefaction-induced lateral spreading can also occur on mild slopes (flatter than 5%) underlain by loose sands and a shallow water table. If liquefaction occurs, the unsaturated overburden soil can slide as intact blocks over the lower, liquefied deposit, creating fissures and scarps.

Liquefaction and lateral spreading potential in the County is high in lowland areas of Santa Cruz, the Soquel Valley, and the Pajaro River Valley (Santa Cruz County 2017). Liquefaction can cause serious damage to foundations and bases of structures (USGS 2017). Landslides and other forms of mass wasting, including mud flows, debris flows, soil slips, and rock falls, occur as soil or rock moves downslope under the influence of gravity. Intense rainfall or seismic shaking could trigger landslides. Areas subject to landslide hazards are widely dispersed across inland portions of the County (Santa Cruz County 2017). The most concentrated areas of past landslide activity in the County are in the western foothills of Ben Lomond Mountain and the foothills that border the County, southeast of State Route 17 (Roberts et al. 1988).

Expansive soils are associated with clay-rich sediment deposits on alluvial floodplains and generally occur in the southern portion of the County and along the coast, especially in Santa Cruz and Capitola (Santa Cruz County 2017).

The County does not have any areas that have a high susceptibility to subsidence. Estimated potential for areas within the County that are at a low susceptibility to subsidence include the coastal areas of the County, as well as inland areas toward the middle of the County (DWR 2014).

Project Corridor Setting

This discussion of geology and soils in the Project corridor is based primarily on the Geotechnical Investigative Report – Monterey Bay Sanctuary Scenic Trail Segments 8 and 9 (Pacific Crest Engineering 2021) and associated Technical Memorandum (Pacific Crest Engineering 2022). Additional background data was obtained from online databases maintained by the California Geological Survey.

Geologic Formations

The Project corridor transects three distinct geologic units: basin deposit, lowest emergent coastal terrace deposit, and Purisima Formation bedrock. Basin deposits are mapped within the portions of the corridor near the Santa Cruz Beach Boardwalk, Santa Cruz Harbor, and Twin Lakes State Beach at Leona Creek. Basin deposits typically consist of unconsolidated, plastic clay and silty clay that is rich in organic materials and can locally contain thin interbedded layers of silt and silty sand.

Alternating sections of lowest emergent coastal terrace deposits and Purisima Formation bedrock are mapped as underlying the segment of the trail from East Cliff Drive at the San Lorenzo River to Woods Creek at the Santa Cruz Harbor and from the east side of the Santa Cruz Harbor to 17th Avenue. The coast terrace deposits are generally well-sorted sand with relatively continuous layers of gravel deposited in a near-shore, high-energy environment. Purisima Formation bedrock is described as very thick-bedded, yellowish tuffaceous and diatomaceous siltstone containing thick interbeds of bluish-gray, semi-friable, fine grained andesitic sandstone.

Soils and Soil Conditions

The surface soils within the Project corridor vary from firm to stiff clays, loose to medium dense sand, and very dense Purisima Formation bedrock. Human-made fill was encountered in several locations, most notably at the trail in-fill drainage and culvert crossing locations. No landslide deposits are mapped within the proposed trail route. However, portions of the trail will cross infilled drainages, especially in the areas of Twin Lakes State Beach (Pacific Crest Engineering 2021). In addition, the basins deposits, which include the area around the Santa Cruz Beach Boardwalk, the areas around the Santa Cruz Harbor, and some areas around Twin Lakes State Beach, are mapped with a "very high" susceptibility for liquefaction (**Figure 3.5-2**). Finally, the Project corridor is underlain by varying areas of low to moderately expansive clay.

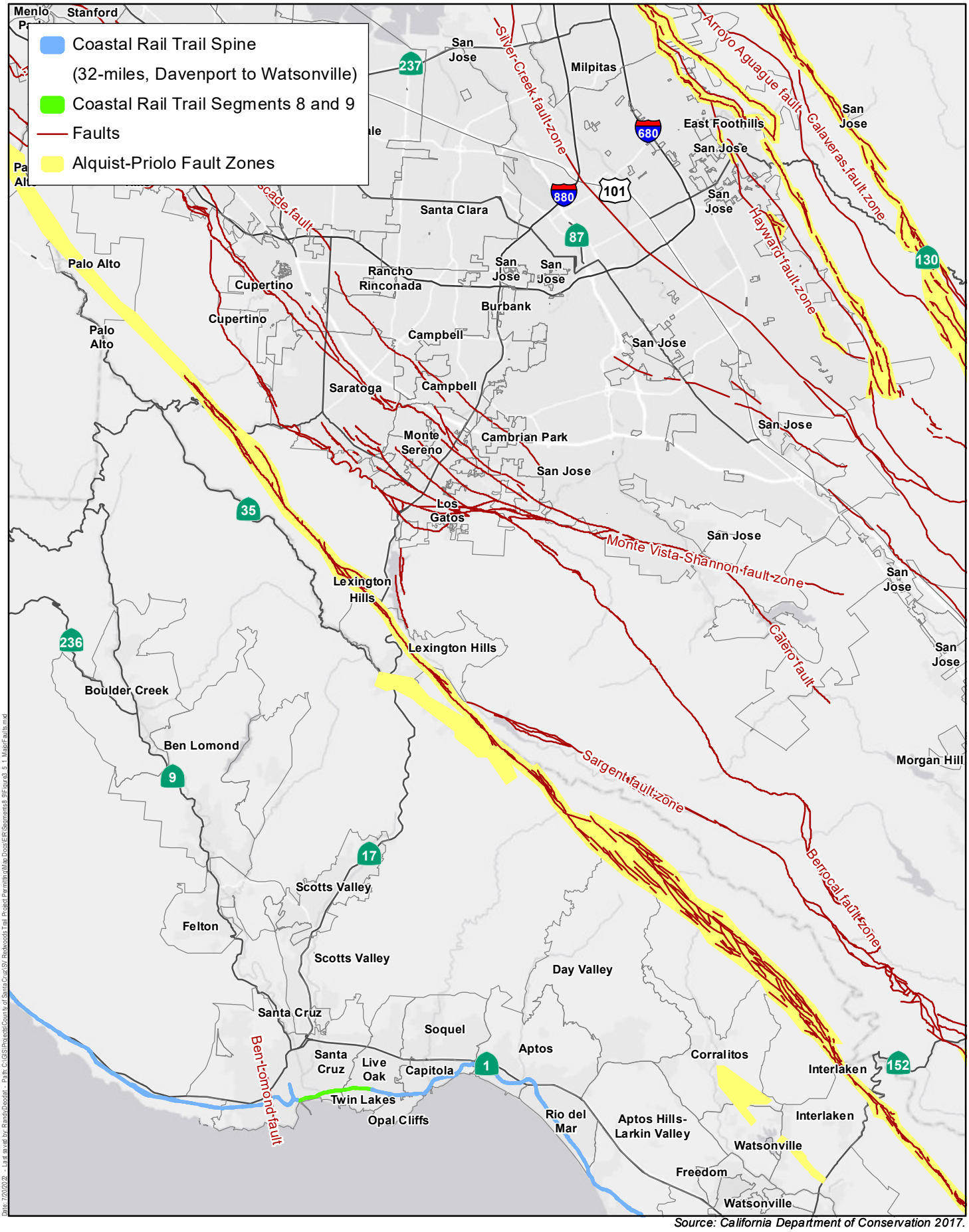
Paleontological Resources

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (SVP 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a project.

As shown on **Figure 3.5-1** and described in **Table 3.5-2**, the Project corridor is underlain by four geologic units mapped at the surface by Brabb (1997) and Wagner et al. (2002): Holocene basin deposits (Qb), Holocene alluvium (Q), late Miocene to Pliocene Purisima Formation (Ppu), and Pleistocene marine terrace deposits (Qmt).

Holocene-aged Quaternary basin deposits (Qb) underlie Schwan Lagoon, Woods Lagoon, Corcoran Lagoon, and all of Segment 8 within the Project corridor (**Figure 3.5-3**). Quaternary basin deposits consist of unconsolidated, organic-rich, silty clay or clay with local, thin, silt, and silty sand interbeds (Brabb 1997). Quaternary basin deposits represent deposition within estuaries, lagoons, sloughs, flood basins, and lakes and are up to 90 feet thick. Quaternary basin deposits are generally considered too young (i.e., less than 5,000 years old) to preserve paleontological resources.

Holocene-aged Quaternary alluvium (Q) underlies the western edge of Segment 9 (**Figure 3.5-3**). Quaternary alluvium consists of unconsolidated, moderately sorted silt and sand with lenses of clay and silty clay and, in some areas, gravel (Brabb 1997). Quaternary alluvium is generally considered too young (i.e., less than 5,000 years old) to preserve paleontological resources.



Source: California Department of Conservation 2017.

Harris & Associates

N

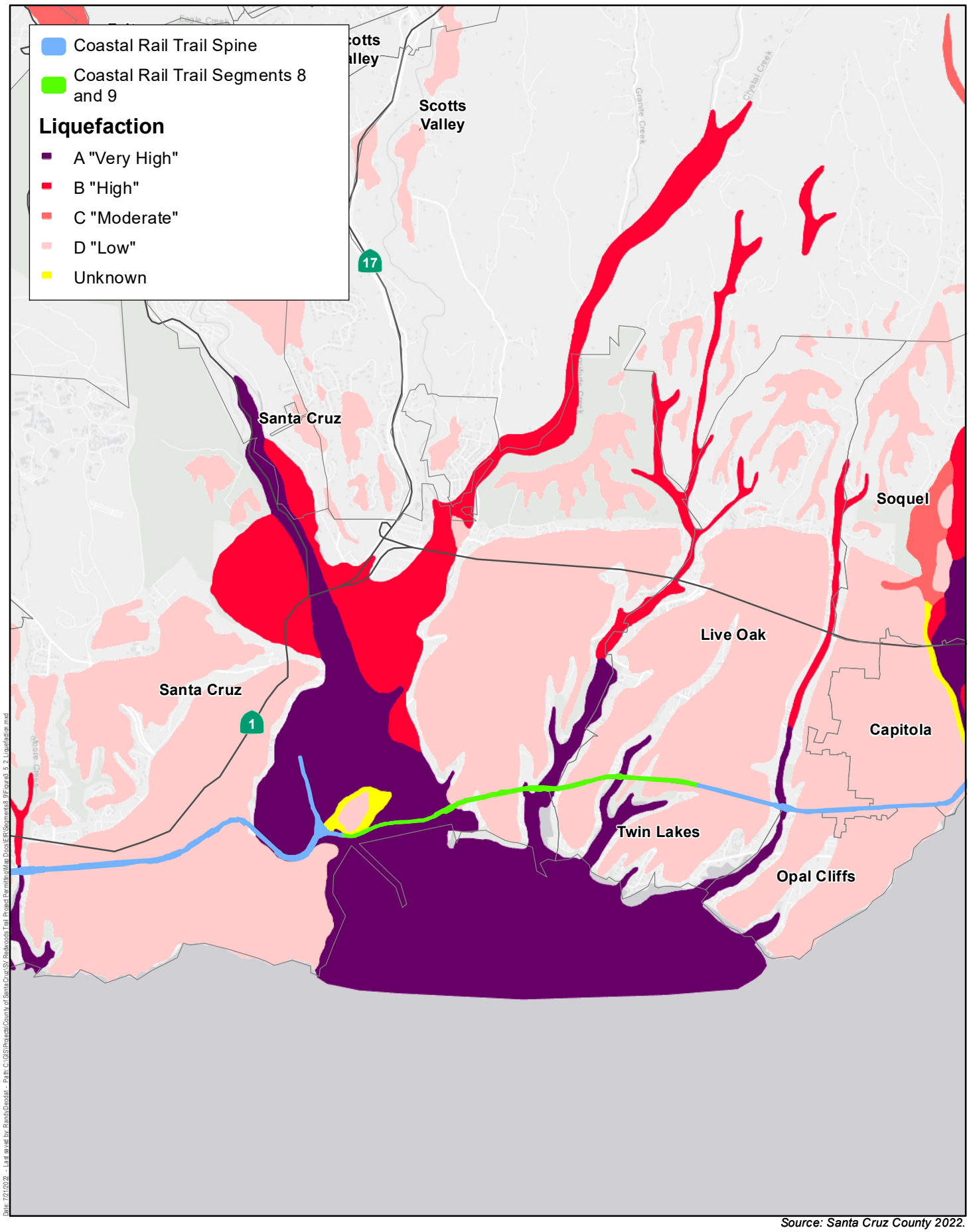
0 2.5 5

Miles

Figre 3.5-1

Major Faults

Coastal Rail Trail Segments 8 and 9



Source: Santa Cruz County 2022.

Harris & Associates

N

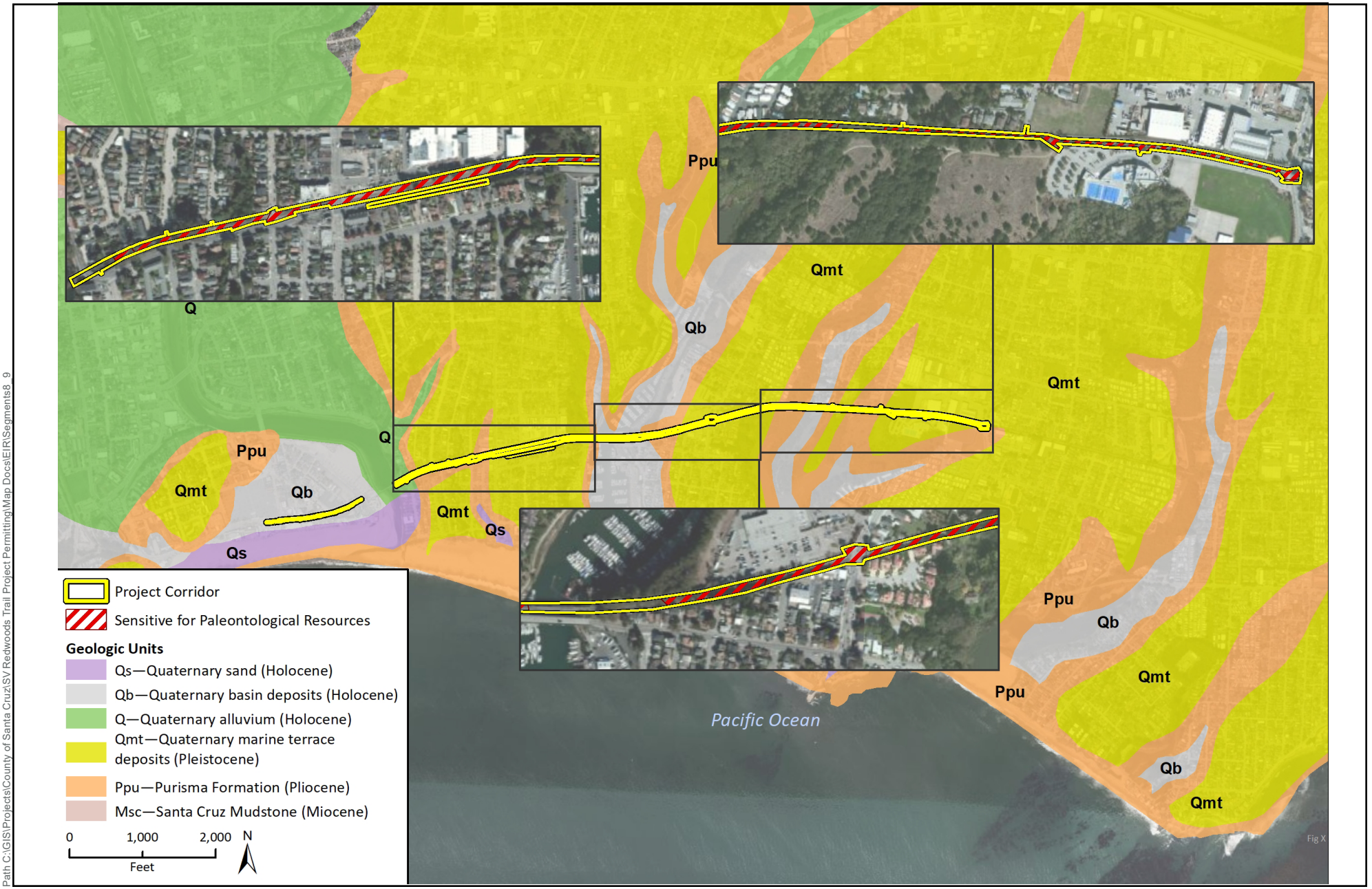
0 0.5 1

Miles

Figure 3.5-2

Liquefaction Zones

Coastal Rail Trail Segments 8 and 9



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

N 0 1000 2000 Feet

Figure 3.5-3

Segment 9 Paleontological Resources Sensitivity

The Miocene to late Pliocene-aged Purisima Formation (Ppu) is exposed on slopes along the edges of Schwan Lagoon, Woods Lagoon, Corcoran Lagoon, and San Lorenzo River (**Figure 3.5-1**). The Purisima Formation is composed of thick-bedded, yellow-gray tuffaceous and diatomaceous siltstone with thick interbeds of blue-gray, semi-friable, fine sandstone (Brabb 1997). The Purisima Formation is up to 3,000 feet thick and underlies Quaternary surficial deposits. The Purisima Formation has yielded many marine vertebrate and invertebrate fossil taxa, including whales (Cetacea), sea cows (Sirenia), walruses (Odobenidae), fur seals (Otariidae), birds, bony fish, and sharks (Boessenecker et al. 2014; PBDB 2022; UCMP 2022).

Pleistocene-aged Quaternary marine terrace deposits (Qmt) underlie much of Segment 9 (**Figure 3.5-3**). Quaternary marine terrace deposits consist of semi-consolidated, well-sorted sand with a few, thin, continuous gravel interbeds (Brabb 1997). Quaternary marine terrace deposits represent Pleistocene-aged, near-shore marine environments. Marine terrace deposits have produced significant terrestrial and marine vertebrate and invertebrate fossils throughout California, including in the County (Bradley and Addicott 1968; Woodring et al. 1946). These deposits have yielded taxa such as camel (Camelidae), horse (Equidae), bison (Bison), ground sloth (Pilosa), mammoth (Mammuthus), whale (Cetacea), shark, and bony fish (Jefferson 2010; PBDB 2022; UCMP 2022).

Table 3.5-2 Geologic Unit Sensitivity

Geologic Unit	Segment	Paleontological Sensitivity
Quaternary basin deposits (Qb)	Segments 8 and 9	Low
Quaternary alluvium (Q)	Segment 9	Low
Purisima Formation (Ppu)	Segment 9	High
Quaternary marine terrace deposits (Qmt)	Segment 9	High

3.5.2 Regulatory Setting

This section describes the federal, state, and local plans, policies, and laws relevant to geology and soils for the Project.

Federal

Clean Water Act

Stormwater-related erosion is one major source of soil-related impacts. Stormwater discharges from construction activities (such as clearing, grading, excavating, and stockpiling) that disturb 1 or more acres, or smaller sites that are part of a larger common plan of development or sale, are regulated under the Clean Water Act through the National Pollutant Discharge Elimination System (NPDES) stormwater program. Prior to discharging stormwater, construction operators must obtain coverage under an NPDES permit. In California, the General Permit for Discharges of Stormwater Associated with Construction Activity (Construction General Permit) is promulgated by the State Water Resources Control Board and administered through the local Regional Water Quality Control Board, which for this area, is the Central Coast Regional Water Quality Control Board.

The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP should contain a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography before and after construction, and drainage patterns across the Project area. The SWPPP must list best management practices (BMPs) the discharger will

use to protect stormwater runoff and indicate the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if BMPs fail, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment. Section A of the Construction General Permit describes the elements that must be contained in a SWPPP.

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC 2621 et seq.) is intended to reduce the risk to life and property from surface fault rupture during earthquakes. The Alquist-Priolo Act prohibits the location of most types of structures intended for human occupancy across the traces of active faults, and strictly regulates construction in the corridors along active faults (Earthquake Fault Zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned, and construction along or across them is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined as within the last 11,000 years). A fault is considered well-defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment (CDMG 1997).

Seismic Hazards Mapping Act of 1990

Like the Alquist-Priolo Act, the Seismic Hazards Mapping Act of 1990 (PRC 2690–2699.6) is intended to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the state is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones.

California Coastal Act

The California Coastal Commission was established in 1972 and is responsible for protecting, conserving, and restoring water quality in coastal environments as detailed in Sections 30230 and 30231 of the California Coastal Act. The California Coastal Commission establishes policies that address shoreline public access and recreation, habitat protection, aesthetic resources, public works, and other uses. The California Coastal Act provides long-term protection of California's coastline for the benefit of the public. New development and redevelopment projects located in a Coastal Zone are required to apply for a Coastal Development Permit prior to construction. The Coastal Development Permit requires projects to demonstrate water quality protection, including minimization of erosion and soil loss, through the implementation of appropriate BMPs.

California Public Resources Code

Section 5097.5 of the California Public Resources Code states the following:

> No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site,

> including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here "public lands" means those owned by or under the jurisdiction of the state or any city, county, district, authority, or public corporation or any agency thereof. Consequently, public agencies are required to comply with California Public Resources Code, Section 5097.5, for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits)

California Environmental Quality Act

The California Environmental Quality Act (CEQA) does not define "a unique paleontological resource or site." However, the Society of Vertebrate Paleontology (SVP) defines a "significant paleontological resource" in the context of environmental review as follows (SVP 2010:11):

> Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are generally older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).

Local

City of Santa Cruz General Plan

The Health, Safety, and Noise Element of the City's General Plan contains goals and policies related to seismic hazards. Goal HZ-6 is "protection from natural hazards." Policies in the City's General Plan to implement this objective include the following:

- **Policy HZ6.1.** Reduce erosion hazards.
- **Policy HZ6.2.** Discourage development on unstable slopes.
- **Policy HZ6.3.** Reduce the potential for life loss, injury, and property and economic damage from earthquakes, liquefaction, and other seismic hazards.

The Historic Preservation, Arts, and Culture Element of the City's General Plan includes goals, policies, and actions related to the provision of public safety and services. Relevant policies include the following:

- **Policy HA1.1.** Preserve (or where not possible, responsibly manage) archaeological and paleontological sites important to the community's heritage.
- **Policy HA1.2.** Protect (or where not possible, responsibly manage) sensitive archaeological and paleontological resources as early in land-use planning and development as possible.
- **Policy HAZ1.6.** Provide opportunities for the interpretation of paleontological and prehistoric and historical archaeology in the city.

City of Santa Cruz Municipal Code

The City's Municipal Code, Section 24.14.070, requires a site-specific Geotechnical Investigation for all development, except projects with fewer than four units, in areas identified in the General Plan as having a high liquefaction potential. Section 24.16.060 requires an Erosion Control Plan for projects located within high erosion hazard areas as designated in the City's General Plan or for development on slopes greater than 10%.

The Grading Ordinance is a subset of Title 18, Buildings and Construction, of the City's Municipal Code and is included in Chapter 18.45, *Excavation and Grading Regulations*. It provides technical regulations for grading and excavation, in conjunction with the Environmental Resource Management provisions in Chapter 24.14, in order to safeguard life, health, safety, and the public welfare; protect fish and wildlife, riparian corridors and habitats, water supplies, and private and public property; and protect the environment from the effects of flooding, accelerated erosion, and/or deposition of silt. The ordinance accomplishes this by providing guidelines, regulations, and minimum standards for clearing, excavation, cuts, fills, earthmoving, grading operations (including cumulative grading), water runoff, and sediment control. In addition, the ordinance includes provisions regarding administrative procedures for issuance of permits and approval of plans and inspections during construction and subsequent maintenance. The City revised the Grading Ordinance in April 2004 in order to strengthen the ordinance regarding implementation of BMPs, including those for erosion and sediment control.

Santa Cruz County General Plan and Local Coastal Program

The Health, Safety and Noise Element of the County's General Plan and Local Coastal Program (Santa Cruz County 1994) contains objectives and policies related to seismic hazards. Goal 6.1 is to "reduce the potential for loss of life, injury and property damage resulting from earthquakes by regulating the siting and design of development in seismic hazard areas; encouraging open space; agricultural or low density land use in the fault zones; and increasing public information and awareness of seismic hazards." Policies in the County's General Plan to implement this objective include geological review for development in designated fault zones (Policy 6.1.1), site investigation regarding liquefaction hazard (Policy 6.1.4), and location of new development away from potentially hazardous areas (Policy 6.1.5).

Objective 5.9 of the Conservation and Open Space Element of the County's General Plan explains the County's goal to "protect hydrological, geological and paleontological resources which stand out as rare or unique and representative in Santa Cruz County because of their scarcity, scientific or educational value, aesthetic quality or cultural significance." The following policies and programs address paleontological resources:

- **Policy 5.9.1 Protection and Designation of Significant Resources**. Protect significant geological features such as caves, large rock outcrops, inland cliffs and special formations of scenic or scientific value, hydrological features such as major waterfalls or springs, and paleontological features, through the environmental review process. Designate such sites on the General Plan and LCP [Local Coastal Program] Resources and Constraints Maps where identified. Currently identified sites of Significant Hydrological, Geological and Paleontological Features are as follows:
    - **Program A**. Continue to identify hydrological, geological and paleontological features in the County, in addition to those currently identified, and continue to develop and maintain a countywide inventory for these resources. (Responsibility: Planning Department)
    - **Program B**. Develop a program to protect unique hydrological, geological and paleontological resources through the negotiation of Open Space Easements, other deed restrictions, and purchase as necessary. (Responsibility: Planning Department, Board of Supervisors)

Santa Cruz County Municipal Code

The County's Municipal Code, Chapter 16.22, is designed to prevent accelerated erosion. Under Section 16.22.040 of the County's Municipal Code, no personnel shall allow for the continued existence of accelerated erosion. Chapter 16.22 requires projects to have an Erosion Control Plan, runoff control and land clearing approval.

Chapter 16.44 describes requirements for paleontological assessments and reports, permitting requirements for projects on the site of paleontological resources, and required actions when paleontological resources are discovered during excavation or other groundbreaking activities.

3.5.3 Methodology and Significance Thresholds

Methodology

This section describes the potential environmental impacts of the Project relevant to geology and soils, including paleontological resources. The impact analysis is based on an assessment of baseline conditions for the Project corridor, including topography, geologic formations, seismicity, soils, and soil conditions, as described in Section 3.5.1, *Existing Conditions*. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction and operation of the Project and recommends mitigation measures, when necessary, to avoid or minimize impacts.

The paleontological sensitivity of the geologic units that underlie the Project corridor were evaluated to assess the Project's potential for significant impacts to scientifically important paleontological resources. The evaluation considered existing information in the scientific literature regarding known fossils within geologic units mapped in the Project corridor. According to the SVP (2010) classification system, geologic units can be assigned a high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources. Following the literature review, a paleontological sensitivity classification was assigned to each geologic unit mapped within the Project corridor. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

Significance Thresholds

As described in the introduction in Chapter 3, *Environmental Impact Analysis*, the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which is a sample Initial Study checklist that includes a number of factual inquiries related to the subject of geology and soils, as well as the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For the purposes of this Environmental Impact Report (EIR), a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

    1. 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.

2. Strong seismic ground shaking.
3. Seismic-related ground failure, including liquefaction.
4. 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 waste water disposal systems where sewers are not available for the disposal of waste water.

F. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units. CEQA does not define "a unique paleontological resource or site." However, the SVP broadly defines significant paleontological resources as follows (SVP 2010):

> Fossils and fossiliferous deposits consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).

Therefore, the loss of paleontological resources that meet the criteria outlined above (i.e., considered a significant paleontological resource) would be considered a significant impact under CEQA.

Through preliminary analysis, it was determined that some of the questions and thresholds are not applicable to the Project, including location in a known Earthquake Fault Zone as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map (Threshold A1) and the use of septic tanks or alternative wastewater disposal systems (Threshold E). Therefore, impacts related to Thresholds A1 and E are included in Section 3.15, *Effects Found to be Less than Significant.*

It is noteworthy that, in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, 377, the California Supreme Court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents." For this reason, the court found the following language from *CEQA Guidelines*, Section 15126.2(a), to be invalid: "An EIR on a subdivision astride an active fault line should identify as a significant effect the seismic hazard to future occupants of the subdivision. The subdivision would have the effect of attracting people to the location and exposing them to the hazards found there." (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 390.)

The court did not hold that CEQA never requires consideration of the effects of existing environmental conditions on the future occupants or users of a proposed project. However, the

circumstances in which such conditions may be considered are narrow: "when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the project's impact on the environment—and not the environment's impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions" (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 377–378). Because this exception to the general rule would presumably never apply to existing seismic hazards, the court concluded that this particular topic was outside the ambit of CEQA (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 390). The court also recognized that, within the entirety of CEQA, certain very specific statutes require consideration of existing conditions on project occupants, and the court treated these statutes as exceptions to the general rule it announced (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 391–392).

In light of the *California Building Industry Association v. Bay Area Air Quality Management District* decision, the City is not required by CEQA to address the extent to which existing seismic hazards—in the form of possible earthquakes, ground shaking, liquefaction, or subsidence—could affect future trail users. Instead, the discussions below (with the exception of the discussion of Impact GEO-3) focus on the extent to which the Project and trail users may exacerbate existing environmental hazards or risks.

3.5.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold A.2:	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

Impact GEO-1 THE PROJECT WOULD NOT EXACERBATE THE EXISTING EXPOSURE OF PEOPLE OR STRUCTURES TO RISKS FROM STRONG SEISMIC GROUND SHAKING. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Project does not include housing or other structures that would result in long-term exposure of people or structures to the risk of loss, injury, or death involving strong seismic ground shaking.

The Project corridor is located in a seismically active area that would experience strong seismic ground shaking following an earthquake along any one of several nearby faults, including the Monterey Bay-Tularcitos Fault, San Andreas (Santa Cruz Mountains) Fault, and San Gregorio Fault located approximately 11.5 kilometers, 16.8 kilometers, and 18.6 kilometers, respectively, from the Project area (Pacific Crest Engineering 2021). This strong seismic ground shaking could damage structures and result in a risk of loss, injury, or death. However, implementation of the Project

would not include construction of habitable structures and therefore would not expose residents to a risk of injury or death following strong seismic ground shaking.

Although implementation of the Project would result in an incremental increase in the number of recreational users in the Project corridor, those visitors would be transient (with short-term exposure), would be located generally in open spaces that support the Project alignment, and would not be exposed to overhead hazards, such as collapsing buildings, that could cause injury or death following strong seismic ground shaking. Trail construction and operation (trail users) would not exacerbate existing seismic ground shaking hazards in that they would not increase the likelihood or strength of future earthquakes. Proposed trail infrastructure (e.g., viaducts, bridge, cantilever) would incorporate seismic design parameters developed from the California Department of Transportation (Caltrans) ARS design spectra (Pacific Crest Engineering 2022).

Based on the lack of habitable structures and compliance with existing regulations for construction of trail infrastructure, the degree to which implementation of the Project would exacerbate the existing risk of loss, injury, or death involving strong seismic ground shaking would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Similar to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, the Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail in its place) does not include housing or other structures that would result in long-term exposure of people or structures to the risk of loss, injury, or death involving strong seismic ground shaking.

Similar to Ultimate Trail Configuration, the Interim Trail alignment is located in a seismically active area, and trail construction and operation (trail users) would not exacerbate existing ground shaking hazards in that the likelihood or strength of future earthquakes would not increase as a result of the Project. Refer to the discussion for Impact GEO-1 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The Interim Trail has fewer improvements required for waterway crossings than the Ultimate Trail Configuration and would not require the proposed viaducts, bridge, and cantilever. However, similar to the Ultimate Trail Configuration, the Interim Trail would require the construction of fencing, guardrails, and retaining walls, which would incorporate seismic design parameters developed from the Caltrans ARS design spectra (Pacific Crest Engineering 2022) and would be designed to withstand adverse effects from strong seismic ground shaking.

Based on the lack of habitable structures and compliance with existing regulations for construction of trail infrastructure, implementation of the Interim Trail Part 1 would not exacerbate the existing risk of loss, injury, or death involving strong seismic ground shaking. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to construction of the Ultimate Trail Configuration and implementation of the Interim Trail Part 1, demolition of the Interim Trail and rebuilding of the rail line (Part 2) does not include housing or other structures that would result in long-term exposure of people or structures to the risk of loss, injury, or death involving strong seismic ground shaking. Demolition of the Interim Trail and rebuilding of the rail line (Part 2) is located in a seismically active area. The rail line would be built in accordance with American Railway Engineering and Maintenance-of-Way Association, Federal

Railroad Administration, and California Public Utility Commission requirements, as applicable, and would be designed to withstand adverse effects from strong seismic ground shaking.

Based on the lack of habitable structures and compliance with existing regulations for construction of rail lines, demolition of the Interim Trail and rebuilding of the rail line would not exacerbate the existing risk of loss, injury, or death involving strong seismic ground shaking. The impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact GEO-1, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the Interim Trail (Parts 1, 2, and 3) would not exacerbate the existing risk of loss, injury, or death involving strong seismic ground shaking because the proposed improvement would incorporate seismic design parameters developed from the Caltrans ARS design spectra (Pacific Crest Engineering 2022) and would be designed to withstand adverse effects from strong seismic ground shaking. Therefore, these combined impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts related to risk of loss, injury, or death involving strong seismic ground shaking. Under either scenario, the Project would require construction of trail improvement including fencing, guardrails, and retaining walls that would be incorporate seismic design parameters developed from the Caltrans ARS design spectra (Pacific Crest Engineering 2022) and would be designed to withstand adverse effects from strong seismic ground shaking. However, for the reasons described in the analysis above for Impact GEO-1, implementation would not exacerbate the existing risk of loss, injury, or death involving strong seismic ground shaking. Overall, this impact of the Project, with or without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration),* as well as for the *Optional First Phase: Trail on the Rail line (Interim Trail)*. Trail construction and operation (trail users) would not exacerbate existing ground shaking hazards in that they would not increase the likelihood or strength of future earthquakes. The switchback trail and necessary fencing, guardrails, and retaining walls along with the East Harbor Connection would incorporate seismic design parameters developed from the Caltrans ARS design spectra (Pacific Crest Engineering 2022) and would be designed to withstand adverse effects from strong seismic ground shaking. The impact would still be **less than significant**. No mitigation is required.

Threshold A.3:	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction.
Threshold A.4:	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.
Threshold 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.

Impact GEO-2 THE PROJECT MAY EXACERBATE EXPOSURE OF THE PUBLIC TO LIQUEFACTION OR LANDSLIDE HAZARDS AND MAY BE LOCATED ON A GEOLOGICAL UNIT OR SOIL THAT WOULD BECOME UNSTABLE AS A RESULT OF LATERAL SPREADING, LANDSLIDES, AND LIQUEFACTION (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

The Project would not include habitable structures and therefore would not expose residents to a risk of injury or death from landslides or seismic-related ground failure, including liquefaction.

Portions of the trail alignment are mapped as an area with very high susceptibility for liquefaction. The basin deposits located throughout the Project area are semi-consolidated; this means that when the silty clay soils become inundated with surface water, they will behave as a liquid instead of draining into the ground. Liquefaction can induce lateral spreading when a liquefied soil mass fails on an inclined slope, making the Project area highly susceptible to lateral spreading. Because the Project area is located on a topographically low area with a slope grade of 15% or less, the Project area is susceptible to moderate lateral spreading. In addition, the majority of the trail alignment is located within topographically low and flat to gently sloping areas, and there are no mapped landslides within the Project corridor. However, there are infilled drainages located along portions of the trail near Twin Lakes State Beach, which could potentially be subject to a landslide hazard that could undermine the trail. These infilled drainages areas previously held and/or transferred water and have been filled with engineered-fill material.

Implementation of the Project would include construction of a paved trail and associated infrastructure (e.g., trail viaducts/bridges, fencing, guardrails, and retaining walls). Construction of the Project would introduce uninhabited built features that could be damaged from liquefaction, landslides, and/or lateral spreading. In addition, implementation of the Project would incrementally increase the number of recreational users in the Project corridor, and those users could be exposed to an increased risk of injury or death from liquefaction or lateral spreading. Steep slopes located along the Project corridor would be subject to a landslide hazard that could potentially undermine the trail.

In compliance with applicable regulations, the Geotechnical Investigation Report prepared for the Project recommends that bridges and other structures be supported by pile foundations (Pacific Crest Engineering 2021, 2022). As described in Chapter 2, *Project Description*, pilings required for the viaducts would be embedded at a minimum of 20 feet. In accordance with the recommendations of the Geotechnical Investigation Report, piles would have a minimum diameter of 24 inches and have a minimum spacing of a least four diameters, center-to-center spacing. Additionally, piles would derive their capacity through friction resistance between the concrete and surrounding soil. The piles and grade beams would contain steel reinforcement. The base of all piles would be cleaned of loose soil prior to placement of steel and concrete.

In addition, surface water runoff along infilled drainage areas would be controlled by the installation of catch basins, sidewalk underdrains, V ditches, French drains, and/or swales to reduce the potential for undermining of the trail once constructed.

With implementation of these recommendations from the project Geotechnical Investigation Reports, impacts associated with lateral spreading and liquefaction would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail in its place) would result in similar impacts related to geological hazards as described above under Impact GEO-2 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. The Interim Trail alignment would traverse the same geologic units and soil formations as the Project.

Construction of the Interim Trail would not include the same waterway crossings as the Ultimate Trail Configuration; therefore, the damage from liquefaction, landslides, and/or lateral spreading would be slightly reduced because no pilings for viaduct construction would be required. However, the Interim Trail would require the construction of retaining walls that may require them to be founded on piles or ground anchors, as described in Impact GEO-2. In addition, surface water runoff along infilled drainage areas along the Interim Trail alignment would be similarly controlled by the installation of catch basins, sidewalk underdrains, V ditches, French drains, and/or swales to reduce the potential for undermining of the trail once constructed. Implementation of these recommendations from the project Geotechnical Investigation Reports, impacts associated with lateral spreading and liquefaction would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would require additional construction and demolition phases compared to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration).* The rail line would be constructed in generally the same location as the existing alignment (prior to Part 1 removal) and would transverse the same amount of liquefiable soil, as described above for the Ultimate Trail Configuration. The rail line would be built in accordance with American Railway Engineering and Maintenance of Way, Federal Railroad Administration, and California Public Utility Commission requirements, as applicable and would be designed to withstand adverse effects associated with lateral spreading and liquefaction. Compliance would ensure that impacts associated with lateral spreading and liquefaction would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact GEO-2, under *Proposed Project: Ultimate Trail Configuration*. The impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the Interim Trail (Parts 1, 2, and 3) would not expose residents to a risk of injury or death from landslides or seismic-related ground failure, including liquefaction as no habitable structures are proposed. However, implementing the Interim Trail requires construction activities in areas mapped as very high susceptibility for liquefaction. Implementation of recommendations from the project Geotechnical Investigation Reports would ensure that these combined impacts would be **less than significant.** No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts related to landslides, liquefaction, and lateral spreading. Under either scenario, the Project would require construction of trail improvement in areas mapped as very high susceptibility for liquefaction. However, for the reasons described in the analysis above for Impact GEO-2, impacts would be reduced with the implementation of recommendations from the Geotechnical Investigation Reports. Overall, this impact of the Project, with or without the optional Interim Trail, would be **less than significant.**

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)* since any necessary retaining walls would similarly require the construction of soldier piles as described in Impact GEO-2. Pilings or ground anchors may be required to support the East Harbor Connection switchback trail. Surface water runoff along infilled drainage areas would be similarly controlled by the installation of catch basins, sidewalk underdrains, V ditches, French drains, and/or swales to reduce the potential for undermining of the trail once constructed. Impacts associated with lateral spreading and liquefaction would be **less than significant**. No mitigation is required.

Threshold B:	Result in substantial soil erosion or the loss of topsoil.

Impact GEO-3 THE PROJECT MAY RESULT IN SUBSTANTIAL SOIL EROSION OR LOSS OF TOPSOIL. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

The subsurface soils identified along the Project corridor have a moderate potential for erosion. Construction of the Project could result in soil erosion or the loss of topsoil due to earthmoving activities such as excavation, grading, soil compaction and moving, soil stockpiling, slope modification, and culvert installation. Project construction would involve cut and fill slopes up to a maximum of 2:1. As described in **Table 2-2**, preliminary estimates include 18,983 cubic yards of cut (excavation) volume and 5,238 cubic yards of embankment (fill); therefore, an earthwork balance of cut and fill is unlikely. Although the Project corridor is generally flat, runoff during a large storm event can occur as sheet flow across the Project alignment. This runoff has the potential to result in substantial amounts of erosion, resulting in off-site sediment transport via stormwater.

Because construction of the Project would disturb over 1.0 acre, it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the State Water Resources Control Board. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the State Water Resources Control Board. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Additionally, inspection of construction sites before and after storms is required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the NPDES-required SWPPP would reduce the risk of soil erosion.

As described in Section 2.6, *Project Construction*, the Project includes BMPs to be implemented during construction including, but not limited to, the following:

- Limit grading activities during periods of high wind (over 15 mph) or water for dust suppression
- Water active construction areas as needed based on the activity, soil and wind exposure
- Apply soil stabilizers on inactive construction areas (disturbed lands unused for 4 consecutive days)
- Apply native hydro-seed or non-toxic binders to exposed areas after cut/fill operations
- Maintain at least 2-foot freeboard in haul trucks, and cover all trucks hauling dirt, sand, or other loose materials
- Cover inactive storage piles
- Install perimeter protection (e.g., silt fence, fiber rolls) to prevent contaminated construction runoff from leaving the construction site
- Install project storm drain catch basin and inlet protection (e.g., inlet filters, fiber rolls, gravel bags)
- Implement additional measures in the Soil Management Plan to be prepared by the City, County or their construction contractor

Operation

Post construction, stormwater runoff would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swale included in the trail design. All off-site flows would be similar to existing condition drainage patterns, which would minimize the potential for soil erosion from the trail surfaces. General trail maintenance activities would include regular inspection for damage and signs of excessive erosion and necessary maintenance practices to continue appropriate erosion control. Section 3.8, *Hydrology and Water Quality*, provides a comprehensive analysis of the existing and proposed hydrology and drainage features of the Project. As discussed in Section 3.8, with implementation of the proposed drainage facilities, impacts related to runoff and erosion would be reduced to a less than significant level.

In summary, impacts associated with soil erosion and loss of topsoil would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail in its place) would be result in slightly more impacts related to increased erosion and

soil loss compared to *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* because it requires additional construction and demolition activities associated with removing the rail. Runoff during a large storm event could result in substantial amounts of erosion, resulting in off-site sediment transport via stormwater during construction and demolition activities. However, similar to the Ultimate Trail Configuration, because construction would disturb over 1.0 acre, implementation of the Interim Trail Part 1 would be subject to the NPDES General Permit for Stormwater Discharges and would require the development of a SWPPP. In addition, BMPs would be implemented during construction activities to reduce the potential for erosion and loss of topsoil, as described in Impact GEO-3.

Similar to the Ultimate Trail Configuration, post construction stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swale included in the trail design. All off-site flows would be similar to existing condition drainage patterns, which would minimize the potential for soil erosion from the trail surfaces, as described in Impact GEO-3 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. In addition, general trail maintenance activities would include regular inspection for damage and signs of excessive erosion and necessary maintenance practices to continue appropriate erosion control. Therefore, the impact would be **less than significant.** No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and implementation of the Interim Trail Part 1, demolition of the Interim Trail and rebuilding of the rail line (Part 2) would result in construction and demolition activities that could result in substantial amounts of erosion, resulting in off-site sediment transport via stormwater during demolition and construction activities. Similarly, BMPs would be implemented during construction to reduce the risk of soil erosion and/or loss of topsoil. Post construction, stormwater would flow from the rail to the existing drainage system or natural material swales that were added for the Interim Trail (Part 1), which would be modified as necessary to retain similar drainage pattern. Similar to the Project, all off-site flows would be similar to existing condition drainage patterns, which would minimize the potential for soil erosion from the rail line. These impacts would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact GEO-3, under *Proposed Project: Ultimate Trail Configuration*. This impact would be **less than significant.** No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the Interim Trail (parts 1, 2 and 3) would result in more impacts related to increased erosion and loss of topsoil because of the additional construction activities associated with parts 2 and 3. However, parts 1, 2 and 3 would not be implemented concurrently, and implementation of each part would require compliance with the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, which require the development of a SWPPP and implementation of BMPs during construction and demolition activities to reduce the potential for erosion and loss of topsoil. Post construction, off-site flows along the Interim Trail (parts 1, 2, and 3) would be similar to existing condition drainage

patterns, which would minimize the potential for soil erosion from the trail surfaces. Therefore, these combined impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts related to erosion and loss of topsoil. Under either scenario, the runoff during a large storm event can occur as sheet flow and has the potential to result in substantial amounts of erosion, resulting in off-site sediment transport via stormwater during construction and demolition activities. In addition, with and without the optional Interim Trail, post construction stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swale included in the trail design, which would minimize the potential for soil erosion from the trail surfaces. However, the Project with the optional Interim Trail would result in slightly increased construction and demolition activities compared to the Project without the Interim Trail because the Interim Trail has two additional construction phases. However, as discussed above, compliance with the NPDES and implementation of BMPs would reduce the potential for erosion and loss of topsoil. Overall, the impact of the Project, with or without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*, as runoff during a large storm event can occur as sheet flow across the trail alignment. This runoff has the potential to result in substantial amounts of erosion, resulting in off-site sediment transport via stormwater. BMPs would be implemented during construction of the East Harbor Connection to reduce the risk of soil erosion and/or loss of topsoil. Because the switchback trail is on a slope, the trail design would include features to channel runoff (e.g., swales, V ditches, French drains, pipes), like the rest of the Project. Therefore, during operation of the East Harbor Connection, stormwater would surface flow from the new paved trail into the existing drainage system, and off-site flows would be similar to existing condition drainage patterns, which would minimize the potential for soil erosion from the trail surfaces. Impacts associated with soil erosion and/or loss of topsoil would be **less than significant**. No mitigation is required.

Threshold 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.

Impact GEO-4 THE PROJECT WOULD NOT EXACERBATE THE EXISTING RISK TO LIFE OR PROPERTY RESULTING FROM EXPANSIVE SOILS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Expansive soils are associated with clay-rich sediment deposits on alluvial floodplains. The Project corridor is underlain by varying areas of moderately expansive clay. Implementation of the Project would include construction of a paved trail and associated infrastructure (e.g., trail viaducts/bridges, fencing, guardrails, and retaining walls). The Project would not include habitable structures and therefore would not expose residents to a risk of injury or death from expansive soils. However,

seasonal shrinking and swelling of expansive clay soils could result in heave or settlement damage to proposed improvements.

As stated in Chapter 2, the Project would be constructed in accordance with the recommendations included in the project Geotechnical Investigation Reports, such as placing pavement and structural foundations upon non-expansive engineering fill (Pacific Crest Engineering 2021, 2022). In addition, in areas of human-made fill which such soils underlie shallow structural foundations, vehicular pavement sections or retaining wall footings shall be completely excavated to undisturbed native material. Any voids or excavations created by fill removal shall be backfilled with properly compacted non-expansive native soils that are free of organic and other deleterious materials, or with approved imported fill. Exposed soils in pavement and/or pathway areas should be removed to a minimum depth of 8 inches below finished subgrade or as designated by a registered engineer. Areas to support concrete pavement, structural foundations and retaining walls shall be subexcavated to a minimum of 12 inches below finished subgrade or bottom of the footing, whichever is greater. Recompacted sections should extend 2 feet horizontally beyond the pavement perimeter and 3 feet beyond concrete slabs and retaining wall foundations.

With implementation of the recommendations in the project Geotechnical Investigation Reports, impacts associated with expansive soils would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail in its place) would result in similar impacts related to expansive soils as described above under Impact GEO-4 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration).* Like the Ultimate Trail Configuration, the Interim Trail alignment is underlain by the same varying areas of moderately expansive clay, and the trail would not include the construction of habitable structures, so there would be no exposure of residents to a risk of injury or death from expansive soils. Additionally, the Interim Trail Part 1 would be constructed in accordance with the Geotechnical Investigation Report recommendations for expansive soils as described in Impact GEO-4. With implementation of the recommendations in the project Geotechnical Investigation Reports, impacts associated with expansive soils would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would occur in the Project corridor and thus transverse liquefiable soil, similar to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail. The rail line would be built in accordance with American Railway Engineering and Maintenance of Way, Federal Railroad Administration, and California Public Utility Commission requirements, as applicable and would include recommendations for construction in areas of expansive soils. Compliance would ensure that impacts associated with expansive soils would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact GEO-4, under *Proposed Project: Ultimate Trail Configuration*. This impact would be **less than significant.** No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the Interim Trail (parts 1, 2 and 3) would result in similar impacts related to expansive soils. Implementation of the optional Interim Trail would follow the recommendations in the project Geotechnical Investigation Reports. Therefore, these combined impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts related to expansive soils. Under either scenario, the Project would construct trail improvement in areas underlain by varying areas of moderately expansive clay. However, for the reasons described in the analysis above for Impact GEO-4, impacts would be reduced with the implementation of recommendations from the Geotechnical Investigation Reports. Overall, the impact of the Project, with or without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*, due to the presence of underlying moderately expansive clay. The East Harbor Connection would be constructed in accordance with the recommendations included in the project Geotechnical Investigation Reports similar to the Project. Impacts associated with expansive soils would be **less than significant**. No mitigation is required.

Threshold F:	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact GEO-5 GROUND-DISTURBING ACTIVITIES DURING PROJECT CONSTRUCTION MAY DIRECTLY OR INDIRECTLY DESTROY A UNIQUE PALEONTOLOGICAL RESOURCE OR SITE OR UNIQUE GEOLOGIC FEATURE. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Based on the record search and literature review, the paleontological sensitivity of the geologic units underlying the Project corridor was determined in accordance with criteria set forth by the SVP (2010). As shown on **Figure 3.5-3** and discussed in Section 3.5.1, four geologic units underlie the Project corridor as follows. Quaternary alluvium and Quaternary basin deposits have low paleontological sensitivity because, due to their Holocene age, they are likely too young to preserve paleontological resources. The Purisima Formation and Quaternary marine terrace deposits have high paleontological sensitivity because these geologic units are known to yield significant paleontological resources in the County and throughout California (Bradley and Addicott 1968; Jefferson 2010; PBDB 2022; UCMP 2022; Woodring et al. 1946). Paleontological sensitivity of the four geologic units underlying the Project corridor are shown in **Table 3.5-2**.

The Geotechnical Investigation Report prepared for the Project is based on an analysis of 20 borings along the Project corridor (Pacific Crest Engineering 2021). The borings identify areas along the

corridor that have been overlain with artificial fill, which does not have potential to include fossils. Nine borings were conducted along the centerline of the existing rail tracks and encountered between 2 and 4 feet of artificial fill. Three of these borings were within what appeared to be infilled drainages associated with Schwan Lagoon, and they contained between 13 and 40 feet of artificial fill. The westernmost boring, within the existing bike lane near the intersection of Beach Street and 3rd Street, contained 6 inches of fill. The remaining 10 borings encountered native sediments immediately below the surface. Ground disturbance in the areas identified to have artificial fill would only have the potential to encounter fossils in native soil below the fill.

Grading or excavation in areas mapped as Quaternary marine terrace deposits or the Purisima Formation, as shown on **Figure 3.5-1,** along various portions of Segment 9 could result in significant impacts to paleontological resources, if encountered. Excavations for the Project and as-needed utility trench work are anticipated to reach up to 6 feet below the surface. Such excavations in sediments with a high paleontological sensitivity (i.e., Quaternary marine terrace deposits or Purisima Formation) could significantly impact paleontological resources directly or indirectly. Additionally, pilings for viaducts would be embedded a minimum of 20 feet below the surface. These pilings would be drilled into the ground, and there would be no digging or excavation. Drilling for pilings would disturb a small volume of sediment (the majority of which is anticipated to be low-sensitivity Quaternary basin deposits), and the potential impacts to paleontological resources from pile drilling would be minimal and not significantly impact paleontological resources. Overall, because there is the potential for direct and indirect impacts to paleontological resources from excavations during Project construction in Segment 9, this impact would be **less than significant with mitigation** (Mitigation Measure GEO-5).

Mitigation Measure GEO-5 Implement Paleontological Resources Protection Measures during Construction in High Sensitivity Areas

The following measures shall be implemented during project excavation activities in Segment 9 on geologic units that have high sensitivity to paleontological resources (Purisima Formation and Quaternary marine terrace deposits). Areas along Segment 9 that do not have high sensitivity for paleontological resources and would not require the following mitigation include construction of the cantilever/bridge over Santa Cruz Harbor and excavation in drainages and creek channels north of the Twin Lakes State Beach.

1. **Retain Qualified Professional Paleontologist.** Prior to excavation, the City of Santa Cruz shall retain a qualified professional paleontologist who is defined by the Society of Vertebrate Paleontology (2010) as an individual, preferably with an MS or PhD in paleontology or geology, who is experienced with paleontological procedures and techniques, who is knowledgeable in the geology of California, and who has worked as a paleontological mitigation project supervisor for at least 2 years. The qualified professional paleontologist shall direct all mitigation measures related to paleontological resources.
2. **Prepare Paleontological Worker Environmental Awareness Program.** Prior to the start of construction, the qualified professional paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction staff.
3. **Monitor for Paleontological Resources during Construction.** As determined appropriate by the qualified professional paleontologist, paleontological monitoring shall be conducted during initial excavations within sediments assigned high paleontological sensitivity (i.e., Quaternary marine

terrace deposits and Purisima Formation). Paleontological monitoring shall be conducted by a paleontological monitor with experience with collection and salvage of paleontological resources and who meets the minimum standards of the Society of Vertebrate Paleontology (2010) for a paleontological resources monitor. The duration and timing of the monitoring will be determined by the qualified professional paleontologist based on the observation of the geologic setting from initial ground disturbance and subject to the review and approval by the City or County of Santa Cruz, depending on the jurisdiction of the work. The qualified professional paleontologist may determine that full-time monitoring is not warranted based on the specific geologic conditions once the full depth of excavations has been reached, and may recommend that monitoring be reduced to periodic spot-checking or ceased entirely. The qualified professional paleontologist may determine that monitoring shall be reinstated if any new ground disturbances are required, and reduction or suspension shall be reconsidered by the qualified professional paleontologist at that time.

In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease, and a qualified professional paleontologist shall evaluate the find before construction activity in the area resumes. If it is determined that the fossil is scientifically significant, the qualified professional paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:

A. **Fossil Salvage.** If fossils are discovered, the paleontological monitor shall have the authority to halt or temporarily divert construction equipment within 50 feet of the find until the paleontological monitor and/or qualified professional paleontologist evaluate the discovery and determine if the fossil may be considered significant. Typically, fossils can be safely salvaged quickly by a single paleontological monitor and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Bulk matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits.

B. **Fossil Preparation and Curation**. Once salvaged, significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photographs, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the qualified professional paleontologist.

4. **Final Paleontological Mitigation Report.** Upon completion of ground-disturbing activity (and curation of fossils if necessary), the qualified professional paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the Project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the City of Santa Cruz. If the monitoring efforts produced fossils, then a copy of the report shall also be submitted to the designated museum repository.

Operation

Operation of the Project would not disturb paleontological resources because trail users would not disturb paleontological resources, and there would be no ground-disturbing activities during operation. Impacts would be **less than significant.** No mitigation is required.

In summary, this impact would be **less than significant with mitigation** (Mitigation Measure GEO-5).

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The Interim Trail alignment encompasses the same geologic units with the same paleontological sensitivity as the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Although the alignments vary slightly, with the Interim Trail being located on top of the existing rail line, the underlying geology and associated paleontological sensitivity is the same for both alignments. Implementation of Interim Trail (Part 1) includes demolition of the existing rail and construction of the Interim Trail in generally the same location. Excavations for construction of the Interim Trail would reach depths of 6 feet, similar to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. However, since the Interim Trail would be built along the existing rail line, 2 to 4 feet of fill would be expected beneath the surface before native sediments would occur per the boring results of the Geotechnical Investigation Report (Pacific Crest Engineering 2021). However, because excavation would still occur down to 6 feet for the Interim Trail, there would be the potential to disturb paleontological resources. Therefore, Mitigation Measure GEO-5 would be required for the Interim Trail. This impact would be **less than significant with mitigation** (Mitigation Measure GEO-5).

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Part 2) would disturb only previously disturbed sediments within the Santa Cruz County Regional Transportation Commission right-of-way. There would be no excavation of previously undisturbed soils. Therefore, the Interim Trail would have **no impact** to paleontological resources. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Potential impacts to paleontological resources for the construction of the Ultimate Trail Configuration as Part 3 of the Interim Trail would be similar to that described above for the Ultimate Trail Configuration. Refer to the discussion under Impact GEO-5 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. This impact would be **less than significant with mitigation** (Mitigation Measure GEO-5).

Combined Effect of Interim Trail Parts 1, 2, 3

Combined effects of the Interim Trail (Parts 1, 2, and 3) on paleontological resources would **be less than significant with mitigation** (Mitigation Measure GEO-5). There would be the potential to unearth paleontological resources during ground-disturbing activities, and implementation of Mitigation Measure GEO-5 would be required during Parts 1 and 2 to reduce impacts to paleontological resources.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would cross the same geologic units, and excavation would occur to similar depths. However, the optional Interim Trail would include two additional phases of project contrition and ground-disturbing activities. Therefore, the potential to significantly impact paleontological resources would be greater for the Project with optional Interim Trail compared to the Project without the Interim Trail. Mitigation Measure GEO-5 would be required for the Project, with and without the Interim Trail, to monitor, report, and if necessary, salvage and curate for paleontological resources. Impacts would be **less than significant with mitigation** (Mitigation Measure GEO-5).

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. With this additional connection, the Project impacts to paleontological resources would be slightly higher because this additional connection point would involve additional ground disturbance and excavation for soils with high paleontological sensitivity, thus increasing the potential to uncover paleontological resources. However, the increased ground disturbance would be minimal, and the impact reduced to less than significant with implementation of Mitigation Measure GEO-5. Therefore, the impact would be **less than significant with mitigation** (Mitigation Measure GEO-5)**.**

3.5.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
GEO-1. The Project would not exacerbate the existing exposure of people or structures to risks from strong seismic ground shaking.	LTS	LTS Similar	LTS Similar	LTS Similar
GEO-2. The Project may exacerbate exposure of the public to liquefaction or landslide hazards and may be located on a geological unit or soil that would become unstable as a result of lateral spreading, landslides, and liquefaction.	LTS	LTS Similar but slightly less because water crossing structures would not be required	LTS Less because no structures would be constructed	LTS Similar
GEO-3. The Project may result in substantial soil erosion or loss of topsoil.	LTS	LTS Similar but slightly more severe due to the required rail demolition activities	LTS Similar but slightly more severe due to the required Interim Trail demolition activities	LTS Similar
GEO-4. The Project would not exacerbate the existing risk to life or property resulting from expansive soils.	LTS	LTS Similar	LTS Similar	LTS Similar
GEO-5. Ground-disturbing activities during Project construction may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	**LTSM**	**LTSM** Substantially similar	NI Lesser Impact	**LTSM** Similar, but slightly greater

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.6 Greenhouse Gas Emissions/Climate Change

This section describes regional greenhouse gas (GHG) emission sources and inventories and the regulatory framework applicable to GHG emissions, and evaluates *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* impacts related to GHG emissions as a result of Coastal Rail Trail Segments 8 and 9 Project (Project) construction and operation. **Table 3.6-1** summarizes identified Project impacts related to GHG emissions/climate change.

Table 3.6-1 Summary of Project Impacts Related to Greenhouse Gas Emissions/ Climate Change[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
GHG-1. The Project would not result in GHG emissions that would have a significant impact on the environment.	Less than Significant	None Required	Less than Significant
GHG-2. The Project would be consistent with applicable GHG reduction plans.	Less than Significant	None Required	Less than Significant
GHG-3. The Project would not expose people or structures to substantial risk of loss, injury, or death from projected sea level rise or flooding.	Less than Significant	None Required	Less than Significant
Beneficial Effect: The Project would provide an alternative transportation corridor for bicyclists, pedestrians, and other users, which is expected to reduce vehicular travel and associated emissions.			

[a] The impacts and mitigation measures apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.6.1 Existing Conditions

Climate Change and Greenhouse Gases

Climate change is the observed increase in the average temperature of Earth's atmosphere and oceans, along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period of time. The baseline against which these changes are measured originates in historical records identifying temperature changes that have occurred in the past, such as during previous ice ages. The global climate is continuously changing, as evidenced by repeated episodes of substantial warming and cooling documented in the geologic record. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming during the past 150 years, and the prevailing scientific opinion on climate change is that most of the observed increase in global average temperatures since the mid-20th century is likely due to the observed increase in anthropogenic (human-induced) GHG concentrations (IPCC 2013).

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. They are present in the atmosphere naturally and are released by natural sources or formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous

oxides (N_2O), and fluorinated gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. The following discusses the primary GHGs of concern.

Carbon Dioxide

The global carbon cycle is made up of large carbon flows and reservoirs. Billions of tons of carbon in the form of CO_2 are absorbed by oceans and living biomass (i.e., sinks) and are emitted to the atmosphere annually through natural processes (i.e., sources). When in equilibrium, carbon fluxes among these various reservoirs are roughly balanced (USEPA 2022a). CO_2 was the first GHG demonstrated to be increasing in atmospheric concentration, with the first conclusive measurements being made in the last half of the 20th century. Currently, CO_2 represents an estimated 65% of total GHG emissions (USEPA 2022b). The largest source of CO_2 and of overall GHG emissions is fossil fuel combustion.

Methane

Methane (CH_4) is an effective absorber of radiation, although its atmospheric concentration is less than that of CO_2 and its lifetime in the atmosphere is limited to 10 to 12 years. Since 1750 (pre-industrial years), the concentration of CH_4 in the atmosphere has increased by 150%, although emissions have declined from 1990 levels (IPCC 2013). Anthropogenic sources of CH_4 include agricultural activities, waste management, energy use, and biomass burning (USEPA 2022b).

Nitrous Oxides

Concentrations of N_2O began to rise at the beginning of the industrial revolution and continue to increase at a relatively uniform growth rate (NOAA 2022). N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizers that contain nitrogen, fossil fuel combustion, and other chemical processes. Use of these fertilizers has increased over the last century. Agricultural soil management and mobile source fossil fuel combustion are the major sources of N_2O emissions.

Fluorinated Gases

Fluorinated gases are powerful GHGs that are emitted from a variety of industrial processes. Fluorinated gases are used as substitutes for ozone-depleting substances such as chlorofluorocarbons, hydrochlorofluorocarbons, and halons, which have been regulated since the mid-1980s because of their ozone-destroying potential and were phased out under the Montreal Protocol (1987) and Clean Air Act Amendments of 1990. Electrical transmission and distribution systems account for most SF_6 emissions, while perfluorocarbon emissions result from semiconductor manufacturing and as a by-product of primary aluminum production. The Project does not propose any new sources of fluorinated gases, and these gases are not included in the analysis below.

Global Warming Potential

Different types of GHGs have varying global warming potential (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). The carbon dioxide equivalent (CO_2e) metric is a consistent methodology used for comparing GHG emissions because it normalizes various GHG emissions to a consistent measure.

CO_2e is the amount of a GHG emitted multiplied by its GWP. Carbon dioxide has a GWP of one. By contrast, CH_4 has a GWP of 25, meaning its global warming effect is 25 times greater than carbon dioxide on a molecule per molecule basis. Therefore, 1 metric ton (MT) of CH_4 is equal to 25 MT CO_2e. The GWP for N_2O is approximately 298 times that of CO_2. Fluorinated gases are typically emitted in smaller quantities than CO_2, CH_4, and N_2O, but these compounds have much higher GWPs. SF_6 is the most potent GHG the Intergovernmental Panel on Climate Change (IPCC) has evaluated, with a GWP of 23,500 (CAPCOA 2022). The total emissions of the pollutants of concern for the Project (CO_2, CH_4, and N_2O) are reported together using the CO_2e metric in this analysis.

Greenhouse Gas Emissions Inventories

Worldwide anthropogenic emissions of GHG were approximately 49,000 million metric tons (MMT) CO_2e in 2010. CO_2 emissions from fossil fuel use accounts for 32,000 MMT. CO_2 emissions from all sources account for 76% of the total. Methane emissions account for 16% of GHGs, and N_2O emissions account for 6% (IPCC 2014).

Total U.S. GHG emissions were 5,981 MMT CO_2e in 2020. Emissions decreased by 9% from 2019 to 2022. This decrease is primarily attributable to less travel and economic activity during the coronavirus (COVID-19) pandemic. However, the decline also reflects the combined impacts of long-term trends in many factors, including population, economic growth, energy markets, technological changes including energy efficiency, and the carbon intensity of energy fuel choices. Relative to 1990, gross emissions in 2020 have decreased by 7.3%, down from a high of 15.7% above 1990 levels in 2007. CO_2 emissions from fossil fuel combustion continue to be the largest source of U.S. GHG emissions, accounting for 92% of emissions in 2020. Transportation was the largest emitter of CO_2 in 2020 followed by electric power generation (USEPA 2022).

Based on the California Air Resources Board (CARB) California Greenhouse Gas Inventory for 2000–2019, California produced 418.2 MMT CO_2e in 2019 (CARB 2021). Transportation is the major source of GHG in California, contributing approximately 40% of the state's total GHG emissions. Industrial operations are the second largest source, contributing 21% of the state's GHG emissions. California's GHG emissions have followed a declining trend since 2007. Specifically, emissions from the electricity sector continue to decline due to growing zero-GHG energy generation sources.

An inventory of GHG emissions in the City of Santa Cruz (City) was prepared as part of the City's Draft 2030 Climate Action Plan (CAP 2030). In 2019, the community emitted approximately 274,816 MT CO_2e. Transportation was the highest contributor to City emissions, accounting for 69% of emissions. Residential and commercial energy account for another 24% of emissions (City of Santa Cruz 2022).

An inventory of GHG emissions in the County of Santa Cruz (County) was prepared as part of the County's Climate Action Strategy (CAS). A GHG emissions inventory for community activities was prepared in 2005 and updated for 2009. In 2009, total emissions for community activities were approximately 1.03 MMT, a decrease of more than 50% from 2005. The dramatic decrease in community emissions reflects the closure of the Davenport Cement Plant, which accounted for approximately 90% of the commercial/industrial emissions in 2005. The 2009 inventory indicates that 70% of the community emissions were generated by the transportation sector (Santa Cruz County 2013). The 2020 CAS Annual Report indicates that the County has met its objective to achieve a 20% reduction in carbon emissions from County operations by June 2020 compared to 2015, and community emissions have decreased by 18% from 2005 to 2015 (Santa Cruz County 2020).

Potential Effects of Climate Change

Potential impacts of climate change in California may include sea level rise, loss of water supply and snow pack, more large forest fires, damage to agriculture, public health impacts, and habitat destruction (OAG 2022). The most relevant effects of climate change to the Project corridor are those that could result in potential damage to a trail located in coastal communities: sea level rise and storm flooding. These potential effects are described below. The area at risk for future sea level rise and storm flooding is based on data from the Coastal Resilience program web mapping tool for year 2100. The Coastal Resilience program is led by The Nature Conservancy in partnership with practitioners around the world who are applying spatial planning innovations to coastal hazard risk, resilience, and adaptation issues (Nature Conservancy 2022).

Sea Level Rise

The sea level along California's coasts has risen nearly 8 inches in the past century and is projected to rise by a total of 20 to 55 inches by the end of the century (OAG 2022). A rise in sea levels could result in coastal flooding and erosion and jeopardize California's water supply due to saltwater intrusion. Segment 8, east of Cliff Street to the San Lorenzo River, and the portion of Segment 9 that crosses Santa Cruz Harbor are in potential future tidal inundation hazard area, as shown on **Figure 3.6-1** (Nature Conservancy 2022).

Storm Flooding

Higher sea levels could worsen existing flood hazards by increasing the frequency of flooding during storms, increasing the extent of storm flooding inland, and preventing drainage of stormwaters (DWR 2016). Segment 8 and the portions of Segment 9 that cross Santa Cruz Harbor and are adjacent to Schwan Lagoon, are adjacent to the potential future storm flooding hazard areas, as shown on **Figure 3.6-2** (Nature Conservancy 2022).

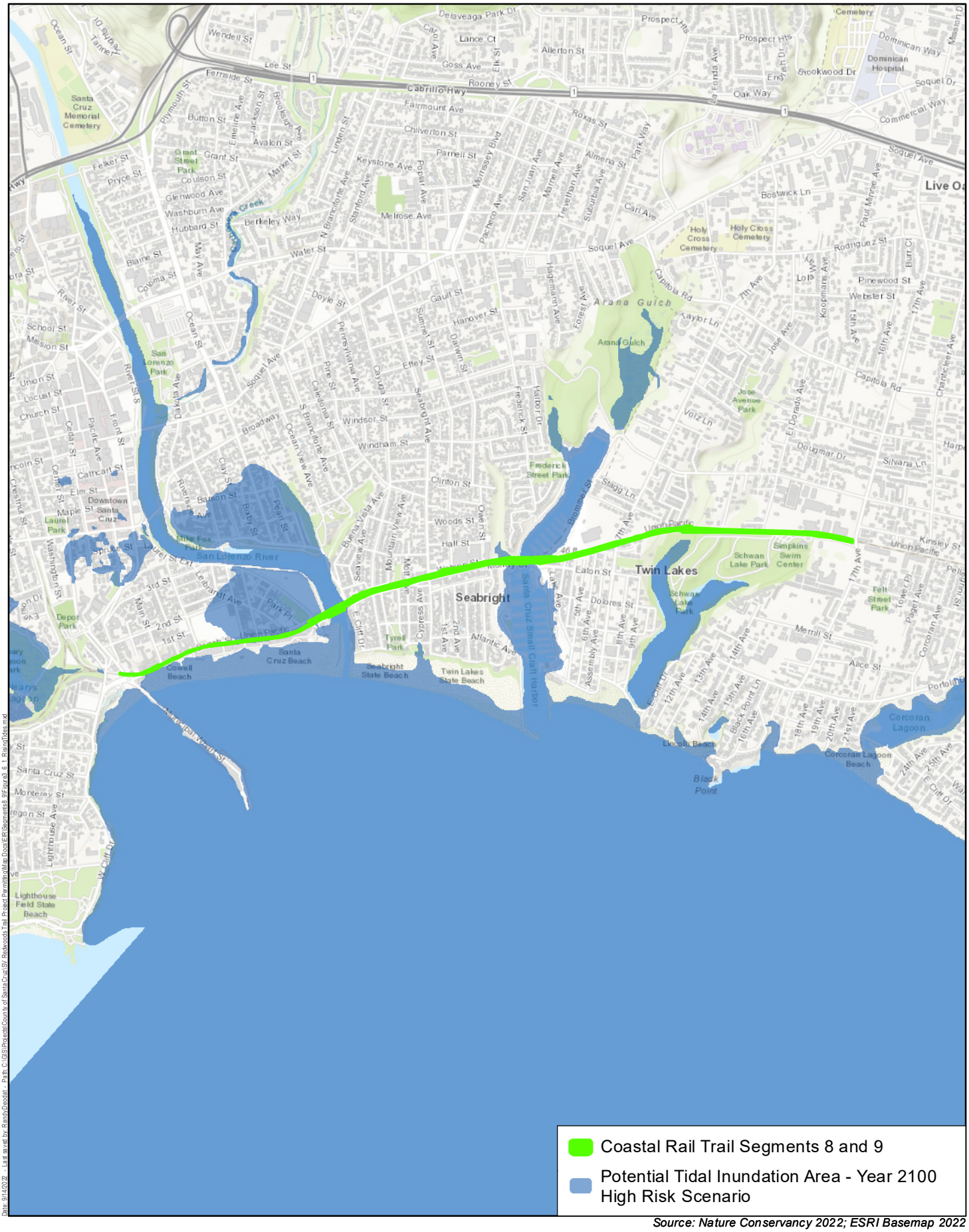
3.6.2 Regulatory Setting

This section describes the international, federal, state, regional, and local plans, policies, and laws relevant to GHG emissions/climate change for the Project.

International

Intergovernmental Panel on Climate Change

In 1988, the United Nations and the World Meteorological Organization established the IPCC to assess the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent IPCC reports emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, the economy, and human health and welfare are unavoidable.



Source: Nature Conservancy 2022; ESRI Basemap 2022

Harris & Associates

N

0 1,000 2,000

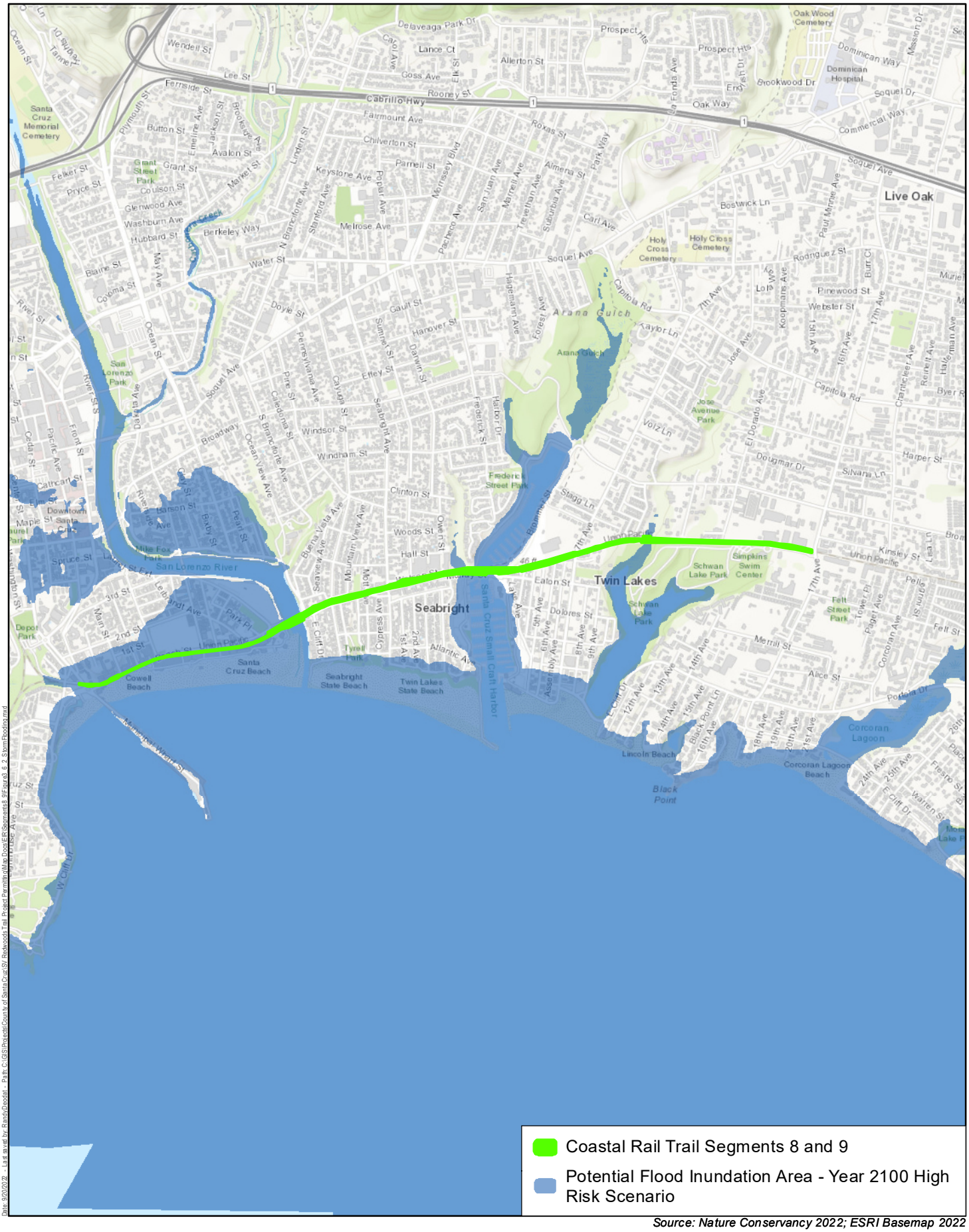
Feet

Figure 3.6-1

Potential Future Tidal Inunation Area

Coastal Rail Trail Segments 8 and 9

Date: 9/14/2022 - Last saved by RandyDeodati - Path: C:\GIS\Projects\County of Santa Cruz\SV RedwoodsTrail Project Permitting\Mxd Docs\EIR\Segments8_9\Figure3_6_1_RisingTides.mxd



Source: Nature Conservancy 2022; ESRI Basemap 2022

Harris & Associates

N

0 1,000 2,000

Feet

Figure 3.6-2

Potential Future Storm Flooding Hazard Area

Coastal Rail Trail Segments 8 and 9

Federal

U.S. Environmental Protection Agency Endangerment Finding and Cause or Contribute Finding

In the Endangerment Finding, signed in December 2009, the administrator of the U.S. Environmental Protection Agency (USEPA) found that GHGs in the atmosphere threaten the public health and welfare of current and future generations. Although the Endangerment Finding does not place requirements on industry, it is an important step in the USEPA's process to develop regulations. This action was a prerequisite to finalizing the USEPA's proposed GHG emission standards for light-duty vehicles. In the USEPA's Cause or Contribute Finding, the administrator found that the combined emissions of GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution that threatens public health and welfare (NRDC 2017).

State

Executive Order S-3-05

On June 1, 2005, California's Governor announced, through Executive Order (EO) S-3-05, the following GHG emissions reduction targets:

- By 2010, California shall reduce GHG emissions to 2000 levels.
- By 2020, California shall reduce GHG emissions to 1990 levels.
- By 2050, California shall reduce GHG emissions to 80% below 1990 levels.

EO S-3-05 directed the Secretary of the California Environmental Protection Agency to coordinate efforts to meet the targets with the heads of other state agencies (the Secretary of the California Business, Transportation and Housing Agency; Secretary of the California Department of Food and Agriculture; Secretary of the California Resources Agency; Chairperson of CARB; Chairperson of the California Energy Commission; and the President of the California Public Utilities Commission). This group became the California Climate Action Team. In 2006, the State Legislature passed the California Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32), which created a comprehensive, multiyear program to reduce GHG emissions in California, as described below. In 2016, the State Legislature passed Senate Bill (SB) 32, which codifies a 2030 GHG emissions reduction target of 40% below 1990 levels.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, the State Legislature adopted AB 32, the California Global Warming Solutions Act of 2006. AB 32 focuses on reducing GHG emissions in California. GHGs as defined under AB 32 include CO_2, CH_4, N_2O, chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, and SF_6. Under AB 32, CARB has the primary responsibility for reducing GHG emissions and continues the Climate Change Action Team to coordinate statewide efforts and promote strategies that can be undertaken by many other California agencies. AB 32 required CARB to adopt rules and regulations that would achieve GHG emissions equivalent to statewide levels in 1990 by 2020.

In general, AB 32 directed CARB to do the following:

- Prepare and approve a Scoping Plan for achieving the maximum technologically feasible and cost-effective reductions in GHG emissions from sources or categories of sources of GHGs by 2020 and update the Scoping Plan every 5 years
- Maintain and continue reductions in emissions of GHG beyond 2020

- Identify the statewide level of GHG emissions in 1990 to serve as the emissions limit to be achieved by 2020
- Identify and adopt regulations for discrete early actions that could be enforceable on or before January 1, 2010
- Adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit GHG emissions
- Convene an Environmental Justice Advisory Committee to advise CARB in developing and updating the Scoping Plan and any other pertinent matter in implementing AB 32
- Appoint an Economic and Technology Advancement Advisory Committee to provide recommendations for technologies, research, and GHG emissions reduction measures

Regarding the first bullet, the initial 2008 Scoping Plan was approved by CARB on December 11, 2008, and included measures to address GHG emissions reduction strategies related to energy efficiency, water use, and recycling and solid waste, among other measures (CARB 2008).

The 2017 Scoping Plan was adopted in November 2017. The 2017 Scoping Plan update incorporates the 2030 target set by EO B-30-15 and codified by SB 32. It identifies how the state can reach the 2030 climate target and substantially advance toward our 2050 climate goal to reduce GHG emissions by 80% below 1990 levels (CARB 2017).

A Draft 2022 Scoping Plan has been made available for public review, but it has not been adopted. The 2022 Scoping Plan update assesses progress toward the statutory 2030 target and identifies a path to achieving carbon neutrality by 2045 (CARB 2022).

Executive Order B-55-18

Governor Brown signed EO B-55-18 in September 2018 to establish a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and to achieve and maintain net negative emissions thereafter (CARB 2022). Policies and programs undertaken to achieve this goal include the following:

- Seek to improve air quality and support the health and economic resiliency of urban and rural communities, particularly low-income and disadvantaged communities
- Be implemented in a manner that supports climate adaptation and biodiversity, including protection of the state's water supply, water quality, and native plants and animals

As described above, a Draft 2022 Scoping Plan has been prepared to identify and recommend measures to achieve the carbon neutrality goal.

Senate Bill 32

Effective January 1, 2017, SB 32 (Stats. 2016, Ch. 249) added a new Section 38566 to the California Health and Safety Code. It states that "in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective greenhouse gas emissions reductions authorized by [Division 25.5 of the California Health and Safety Code], [CARB] shall ensure that statewide greenhouse gas emissions are reduced to at least 40 percent below the statewide greenhouse gas emissions limit no later than December 31, 2030." In other words, SB 32 requires California, by the year 2030, to reduce its statewide GHG emissions so that they are 40% below those that occurred in 1990.

Executive Order S-13-08

On November 14, 2008, the Governor issued EO S-13-08, the Climate Adaptation and Sea Level Rise Planning Directive that provides clear direction for how the state should plan for future climate impacts. EO S-13-08 identifies the following four key actions to reduce the vulnerability of California to climate change:

1. Initiate California's first statewide Climate Change Adaptation Strategy that will assess the state's expected climate change impacts, identify where California is most vulnerable, and recommend climate adaptation policies
2. Request the National Academy of Science establish an expert panel to report on sea level rise impacts in California in order to inform state planning and development efforts
3. Issue interim guidance to state agencies for how to plan for sea level rise in designated coastal and floodplain areas for new and existing projects
4. Initiate studies on critical infrastructure projects and land use policies vulnerable to sea level rise

In accordance with EO S-13-08, the Climate Change Adaptation Strategy was developed by the California Natural Resources Agency, in coordination with the California Environmental Protection Agency; Climate Change Action Team; the Business, Transportation and Housing Agency; California Department of Public Health; and other key stakeholders. Adopted in 2009, the Climate Change Adaptation Strategy synthesizes the most up-to-date information on expected climate change impacts to California for policy makers and resource managers, provides strategies to promote resiliency to these impacts, and develops implementation plans for short- and long-term actions (CNRA 2009).

In 2021, the California Natural Resources Agency released an update to the Climate Change Adaptation Strategy. The update provides recommendations and a framework for policy initiatives in response to the impacts of climate change, with additional considerations for fully integrating equity into California's climate resilience programs (CNRA 2021).

Regional

Association of Monterey Bay Area Governments Metropolitan Transportation Plan and the Sustainable Communities Strategy

The 2040 Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS) was adopted in June 2018 (AMBAG 2018). The 2045 MTP/SCS has been prepared but has not yet been adopted. The MTP/SCS provides a comprehensive planning document that coordinates land use patterns and transportation investments across the region with the objective of developing an integrated, multimodel transportation system. The plan seeks to reduce regional GHG emissions by providing coordinated transit and alternative transportation corridors. The Monterey Bay Sanctuary Scenic Trail (MBSST), including the Project corridor, is identified as a regional pedestrian and bicycle facility in the 2040 and 2045 MTP/SCS.

Local

City of Santa Cruz Climate Action Program

The City adopted a CAP in 2012 with the GHG reduction goal of reducing community-wide GHG emissions 30% by 2020 and 80% by 2050 (compared to 1990 levels) (City of Santa Cruz 2012). Programs to achieve this goal include energy efficiency programs, solar installation programs, and

encouragement of the use of active transportation. The City is currently preparing the CAP 2030 that is available for public review but has not yet been adopted (City of Santa Cruz 2022). The CAP 2030 includes a per-capita emissions target for 2030 that is consistent with SB 32 and advances the state net-zero goal to net-zero per-capita emissions by 2035. Transportation measures to achieve these goals emphasize active transportation opportunities, including new bicycle and pedestrian pathways.

City of Santa Cruz General Plan

Several Elements of the City's General Plan include objectives and policies that would reduce community GHG emissions by encouraging reduced use of resources, including fuel, energy, and water. Key objectives and policies pertinent to reducing GHG emissions are listed by Element below.

HAZARDS, SAFETY, AND NOISE ELEMENT

- **Policy HZ2.1.1.** Support and implement local actions and County, State and federal legislation promoting the reduced emission of carbon dioxide and other greenhouse gases.
- **Policy HZ2.1.2.** Investigate methods for developing a carbon dioxide budget for the City that limits carbon dioxide emissions.
- **Policy HZ2.1.3.** Implement chlorofluorocarbon (CFC) recycling and elimination regulations.
- **Policy HZ2.1.4**. Strive to eliminate the use of polystyrene foam (PSF) packaging products throughout the city.

NATURAL RESOURCES AND CONSERVATION ELEMENT

- **Policy NRC4.1.** Reduce communitywide greenhouse gas emissions (GHG) 30 percent by 2020 and 80 percent by 2050 (compared to 1990 levels).
- **Policy NRC4.2.** Support initiatives, legislation, and actions for reducing and responding to climate change.
- **Policy NRC4.3.** Encourage community involvement and public-private partnerships to reduce and respond to global warming.
- **Policy NRC4.4.** Take early action on significant and probable global warming land use and development issues, including those that might arise after 2030.
- **Policy NRC4.5.** Minimize impacts of future sea level rise.
- **Policy NRC7.3.4.** Conduct a fleet efficiency study to identify where smaller, more efficient, electric or hybrid vehicles can be used by the City to meet a 30 percent reduction in greenhouse gas emissions by 2020.

Santa Cruz County Climate Action Strategy

The County CAS, approved in 2013, outlines a course of action to reduce GHG emissions produced by governmental operations and community activities within unincorporated Santa Cruz County (Santa Cruz County 2013). Implementation of the CAS is intended to build on the fact that Santa Cruz County has already met its share of the statewide 2020 emissions reduction target established in AB 32.

The CAS sets the County on a path toward meeting the statewide goal of 80% below 1990 levels in accordance with EO S-3-05, which is incorporated as a local goal of 59% below 2009 levels by 2050. Annual reports on implementation of the CAS track and evaluate the activities that are being relied

on to reduce GHG emissions and prepare for the impacts of climate change. The most recent annual report (2022) indicates that the County has met its objective to achieve a 20% reduction in carbon emissions from County operations by June 2020 compared to 2015, and community emissions have decreased by 18% from 2005 to 2015 (Santa Cruz County 2020).

Santa Cruz County General Plan and Local Coastal Program

Similar to the City, several elements of Santa Cruz County's General Plan include objectives and policies that would reduce community GHG emissions by encouraging reduced use of resources, including fuel, energy, and water. Key objectives and policies pertinent to GHG emissions are listed by Element below.

CIRCULATION ELEMENT

- **Objective 3.2 – Vehicle Occupancy.** To increase the average number of persons per commute vehicle to 1.35 persons per vehicle, while pursuing a goal of reducing automobile trips to a maximum of 60 percent of all trips through encouragement of alternative transportation by transit, bicycles, and walking.
- **Objective 3.6 – Transit Promotion.** To promote opportunities for regular transit use to commute to school, shopping, employment, and recreational resources.
- **Transit Promotion Policy 3.6.1. Transit-Friendly Design**. Locate and design public facilities and new developments to facilitate transit access, both within the development and outside it.

CONSERVATION AND OPEN SPACE ELEMENT

- **Objective 5.18 – Air Resources**. To improve the air quality of Santa Cruz County by meeting or exceeding state and federal ambient air quality standards, protect County residents from the health hazards of air pollution, protect agriculture from air pollution induced crop losses and prevent degradation of the scenic character of the area.
- **Air Resources Policy 5.18.7 – Alternatives to the Automobile.** Emphasize transit, bicycles, and pedestrian modes of transportation rather than automobiles.
- **Air Resources Policy 5.18.8 – Encouraging Landscaping.** Maintain vegetated and forested areas, and encourage cultivation of street trees and yard trees for their contributions to improved air quality.
- **Air Resources Policy 5.18.9 – Greenhouse Gas Reduction.** Implement state and federal legislation promoting the national goal of 35 percent reduction of carbon dioxide and other GHGs by 2000.

3.6.3 Methodology and Significance Thresholds

Methodology

The Project's construction-related GHG emissions are estimated using the Roadway Construction Emissions Model (RCEM), developed by the Sacramento Metropolitan Air Quality Management District, based on construction assumptions summarized in Section 2.6, *Project Construction*, and consistent with the modeling assumptions described in Section 3.2, *Air Quality*. The RCEM is used because it was developed to reflect linear construction projects, such as roadways, but may also be used for other types of linear projects, such as trails. The methodology of the RCEM is consistent with the most recent version of the commonly used California Emissions Estimator Model (CalEEMod, Version 2022.1) (CAPCOA 2022a). Although the current version of CalEEMod also

includes an option for linear projects, it was unavailable for linear projects at the time Project modeling was conducted due to a program error (CAPCOA 2022b), and the previous version of CalEEMod does not include a linear project option. Consistent with revised modeling methodology, the RCEM was selected for the Project. Modeling conservatively assumes implementation of the East Harbor Connection design option. The analysis focuses on CO_2, CH_4, and N_2O because these represent most of the Project's GHG emissions. The remaining GHG emissions are associated with industrial processes, and as a recreational trail, the potential for such emissions from the Project are minimal. Detailed construction modeling assumptions, including construction fleet for each activity, are available in **Appendix D**, Air Quality and GHG Modeling Assumptions.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of GHG emissions and the other environmental topics. The letters and thresholds presented below (A and B) correspond with the questions in the Appendix G Initial Study checklist. The *CEQA Guidelines* do not quantify the amount of GHG emissions that would constitute a significant impact on the environment. Determination of the significance of GHG emissions is at the discretion of the lead agency, which may consider thresholds of significance previously adopted or recommended by other public agencies or recommended by experts (*CEQA Guidelines*, Sections 15064.4[a], 15064.7[c]).

In addition to the two thresholds from the Appendix G Initial Study checklist, this analysis uses a threshold from the MBSST Network Master Plan Environmental Impact Report (EIR) to addresses impacts related to the relevant risk related to climate change, specifically flooding related to sea level rise and storms. Therefore, for the purposes of this EIR, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would:

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.

C. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of projected sea level rise or erosion.

Regarding the first threshold, neither the Monterey Bay Air Resources District nor the City has adopted an evidence-based numeric threshold consistent with the 2017 Scoping Plan and the state's long-term GHG reduction goals. The City and County have adopted CAPs, but these plans do not include a threshold or project-specific requirements for determining whether project emissions are cumulatively considerable. Therefore, they are not considered "qualified" to determine the significance of a project according to *CEQA Guidelines*, Section 15183.5.

The Monterey Bay Air Resources District in the past has recommended use of the Bay Area Air Quality Management District (BAAQMD) adopted thresholds. The BAAQMD has recently released CEQA thresholds that address the state's long-term goal of carbon neutrality; however, the thresholds are specific to land use development projects and consist of project-specific design features that do not apply to active transportation projects (BAAQMD 2022).

GHG analysis guidance published by the state, Monterey Bay Air Resources District, and City and County was reviewed and considered in determining an applicable standard for the Project. As described below, existing thresholds generally fall into three categories: bright-line thresholds, per-capita thresholds, or net-zero emissions.

Bright-Line Thresholds

Numeric thresholds adopted by other agencies were considered as an option, including a threshold of 1,100 MT CO_2e (annual emissions) adopted by the Sacramento Metropolitan Air Quality Management District and referenced in the 2017 Scoping Plan (CARB 2017). These so-called bright-line thresholds[1] address the state's long-term emissions reduction goals by determining a screening level under which a project would not be considered to hinder the state's ability to meet long-term goals. Bright-line thresholds are typically intended to screen out smaller projects with relatively minimal emissions so that the vast majority (typically 90%) of total future development would be subject to mitigation or project features that would reduce GHG emissions, compared to business-as-usual emissions and consistency with GHG reduction goals (CAPCOA 2008). These thresholds were ultimately rejected for this analysis because they do not specifically address the contribution of emissions in Santa Cruz County to the statewide goals.

Service Population or Per-Capita Thresholds

Numeric thresholds based on service population (defined as residents and employees) or per-capita thresholds are also acceptable per the 2017 Scoping Plan. However, the Project would not generate any residents or employees. Therefore, a service population threshold would not be appropriate for a trail project.

Net-Zero Emissions

A screening level of net-zero emissions for ongoing, annual operational emissions is consistent with the Association of Monterey Bay Area Governments (AMBAG) methodology for the 2040 MTP/SCS and the 2017 Scoping Plan. The 2017 Scoping Plan recognizes that achieving no net increase in ongoing operational GHG emissions compared to existing conditions would demonstrate that a project is not contributing to climate change impacts, and it is a recommended objective for land use development projects that are able to feasibly achieve this goal. Therefore, the Project would not result in a significant impact on the environment if GHG emissions would result in zero net additional GHG emissions compared to the existing conditions baseline. A project that does not generate a net increase in GHG emissions would also be consistent with the overall goal of the Draft 2022 Scoping Plan, which outlines a path for statewide carbon neutrality.

Based on the review of existing thresholds related to GHG emissions, the significance of the Project's GHG emissions is based on screening level of net-zero operational emissions.

3.6.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the

[1] A bright-line threshold is a numeric threshold that provides a clearly defined rule to determine whether emissions are significant or less than significant and does not vary based on the size of type of project.

Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold A:	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

Impact GHG-1 THE PROJECT WOULD NOT RESULT IN GHG EMISSIONS THAT WOULD HAVE A SIGNIFICANT IMPACT ON THE ENVIRONMENT. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The potential for the Ultimate Trail Configuration to generate GHG emissions during construction and operation are addressed separately below.

Construction Emissions

Temporary impacts related to construction activities would result in the temporary generation of GHG emissions from operation of heavy construction equipment and generation of truck and vehicle trips. The total GHG emissions estimated for construction of the Ultimate Trail Configuration were estimated using RCEM, as described in the methodology above and presented in **Appendix D**. The estimated total emissions for the Project's 24-month construction period are 1,738 MT CO_2e.

For comparison, in 2020, counties within the AMBAG region, including Santa Cruz County, emitted 4,749,617 MT CO_2e of GHGs (AMBAG 2022). In 2019, the City of Santa Cruz community emissions were approximately 274,816 MT CO_2e (City of Santa Cruz 2022).

Project construction would result in the one-time contribution of approximately 0.04% of the annual regional GHG emissions and 0.6% of annual City emissions. Additionally, construction of the Ultimate Trail Configuration would take place over 2 years; therefore, that actual proportion of a given year's GHG emissions would be even less.

Construction emissions are necessary in order to implement planned active transportation facilities to support regional vehicle miles traveled (VMT) reduction goals, as discussed for operational emissions below. Similarly, the BAAQMD CEQA thresholds for GHG emissions, intended to support the statewide carbon neutrality goal, do not include a threshold for construction emissions because construction emissions typically represent a very small portion of a project's lifetime GHG emissions (BAAQMD 2022). As such, construction of the Ultimate Trail Configuration would result in a nominal one-time contribution to regional GHG emissions.

Operational Emissions

Following construction, operation of the Ultimate Trail Configuration would be an active transportation corridor. It would increase the feasibility of non-motorized transportation and would contribute to a regional net decrease in VMT. Minimal new lighting and solid waste disposal would be required. Lighting would be solar-powered where feasible. Minimal new lighting and solid waste disposal from four new trash receptacles would result in negligible GHG emissions. The Ultimate Trail Configuration would not result in new sources of water use.

As described in Section 2.6 (**Table 2-2**), Project implementation would result in the removal of approximately 381 trees, which would result in the loss of sequestration potential of approximately 29 MT CO_2e per year (USDA 2022). However, as discussed in Section 2.4, *Project Characteristics*, any

trees removed to accommodate the Project would be replaced at an appropriate location that would replace the lost sequestration as the replacement trees mature. Further, the short-term loss of sequestration would be at least partially offset by the aforementioned decrease in VMT and associated emissions. As stated in the Draft 2022 Scoping Plan, emissions from transportation (primarily on-road travel) make up the single largest source of CO_2 emissions in the state, and although GHG emissions are declining due to cleaner vehicles and fuels, rising VMT can offset the effective benefits of adopted regulations (CARB 2022). New alternative transportation options such as the Project are an important component to reducing VMT, particularly because the Project is part of a planned regional alternative transportation network, as described below. The VMT reduction impact of the Project is anticipated to increase over time as additional MBSST segments are completed, and trail use overall increases.

The 2040 MTP/SCS is the regional planning document to reduce GHG emissions related to transportation in the region. The 2040 MTP/SCS and Draft 2045 MTP/SCS include active transportation as a key element to reduce GHGs, reduce roadway congestion, and increase health and the quality of life of residents. These planning documents specifically reference the MBSST Network, including the Project, as a regional walking and biking facility. Therefore, the Ultimate Trail Configuration would implement a planned active transportation facility that would assist in the implementation of the 2040 MTP/SCS, including GHG reductions. Therefore, operation of the Ultimate Trail Configuration would not result in new, ongoing GHG emissions that would have a significant impact on the environment.

In summary, the Ultimate Trail Configuration would result in a temporary one-time contribution of 1,738 MT CO_2e during construction, but it would not result in a net increase in ongoing annual GHG emissions compared to existing site conditions. Further, the Ultimate Trail Configuration implements a goal of the 2040 MTP/SCS to increase active transportation opportunities. GHG emissions are ultimately anticipated to decrease under operation of the Ultimate Trail Configuration as area vehicle trips are replaced by active transportation and use of the trail. Therefore, GHG emissions from the Ultimate Trail Configuration would be **less than significant**. No mitigation is necessary.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail includes removing the rail and constructing the trail (Part 1), which would result in a temporary one-time contribution of GHGs from construction activities. The estimated total emissions for the 24-month construction period for this part of the optional Interim Trail are 1,688 MT CO_2e. Similar to the Ultimate Trail Configuration, construction emissions are generally considered to represent a very small portion of a projects' lifetime GHG impact and do not contribute to the significance of GHG impacts from the optional Interim Trail. Following construction, operation of the optional Interim Trail would be similar to the Ultimate Trail Configuration, although tree removal (124 trees) and associated loss of sequestration potential would be less for Part 1. Refer to the discussion above for the Ultimate Trail Configuration. As such, GHG emissions from implementation of the optional Interim Trail (Part 1) would be **less than significant**. No mitigation is necessary.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the optional Interim Trail and rebuilding the rail line (Part 2) would also result in a temporary one-time contribution of GHGs from construction activities. The estimated total

emissions for the 48-month construction period are 3,562 MT CO_2e. Similar to the Ultimate Trail Configuration, construction emissions do not contribute to the significance of GHG impacts from the optional Interim Trail. Following construction, this part of the optional Interim Trail implementation would not operate as an active transportation corridor and thus would not include any sources of GHG emissions. As such, GHG emissions from implementation of the optional Interim Trail (Part 2) would be **less than significant**. No mitigation is necessary.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration as Part 3 of the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration, although the associated tree removal would be lower (approximately 280 trees) because 124 of the trees were removed for Part 1 construction. Refer to the discussion above for Impact GHG-1 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is necessary.

Combined Effect of Interim Trail Parts 1, 2, 3

Parts 1 and 2 of implementing the Interim Trail could occur decades apart, so the construction-related GHG emissions would not occur at the same time. However, for informational purposes, the total construction emissions from implementing all three parts would be 6,988 MT CO_2e, which is less than 1% of regional and less than 3% of City GHG emissions compared to 2020 inventories. Similar to the Ultimate Trail Configuration, construction emissions do not contribute to the significance of GHG impacts from the optional Interim Trail. It should be noted that the combined tree removal for all three parts would be approximately 404 (124 during Part 1 + 280 during Part 2), which is greater than the approximately 381 removed for the *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration);* thus, there would be slightly greater loss of carbon sequestration.

Following construction, operation of the optional Interim Trail (Part 1) and operation of the Ultimate Trail Configuration (Part 3) would not generate GHG emissions. Therefore, even when considered together, GHG emissions from implementing all three parts of the optional Interim Trail would be **less than significant**. No mitigation is necessary.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Implementation of the Project with the optional Interim Trail would result in a total one-time contribution of GHG emissions of 6,988 MT CO_2e (from implementing Parts 1, 2 and 3 of the optional Interim Trail). Implementation of the Project without the optional Interim Trail (i.e., constructing only the Ultimate Trail Configuration from the onset) would result in GHG emissions of 1,738 MT CO_2e. As such, implementing the Project with the optional Interim Trail would have an incrementally greater impact related to GHG emissions compared to implementing the Project without the optional Interim Trail. However, one-time construction emissions do not contribute to the significance of GHG impacts from the optional Interim Trail. Following construction, operation of the optional Interim Trail would be similar to the Ultimate Trail Configuration and would result in a net GHG benefit. Refer to the discussion above for the Ultimate Trail Configuration. As such, GHG emissions from implementation of the optional Interim Trail would be **less than significant**. No mitigation is necessary.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be the same as the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because no change in operation would occur as a result of this design option, and it would still be a **less than significant** impact with no mitigation required.

Threshold B:	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Impact GHG-2 THE PROJECT WOULD BE CONSISTENT WITH APPLICABLE GHG REDUCTION PLANS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The CARB 2017 Scoping Plan identifies GHG reductions by emissions sector to achieve a statewide emissions level that is 40% below 1990 levels by 2030 (CARB 2017). The Draft 2022 Scoping Plan outlines a statewide path to achieve carbon neutrality (CARB 2022). The City's CAP and County's CAS outline local paths to achieve the EO S-3-05 target of 80% below 1990 levels, and the City's Draft CAP 2030 includes a carbon neutrality target.

As discussed for Impact GHG-1, following construction, the Ultimate Trail Configuration would result in a net decrease in GHG emissions by implementing alternative transportation infrastructure to decrease regional VMT. Decreasing fossil fuel use from transportation is a key goal in all applicable GHG reduction plans, including through an increase in active transportation. The Project is part of the MBSST Network, which is specifically identified as an alternative transportation route in the AMBAG 2040 and Draft 2045 MTP/SCS. The Ultimate Trail Configuration would contribute to an ongoing net decrease in GHG emissions and would be an investment in bicycle and pedestrian infrastructure in the City and County by implementing two segments (Segments 8 and 9) necessary for the completion of the MBSST Network.

Therefore, the Project would support implementation of the Scoping Plan, City CAP, and County CAS. The Project does not include any components that would interfere with implementation of any GHG reduction plan. Therefore, the Ultimate Trail Configuration would be consistent with applicable GHG reduction plans, and this impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Once the Interim Trail is constructed, operation of the Interim Trail would be similar to the Ultimate Trail Configuration. Refer to the discussion above for Impact GHG-2 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. As such, the optional Interim Trail would be consistent with applicable GHG reduction plans, and this impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Following construction, which includes removing the trail and rebuilding the rail line, this part of optional Interim Trail implementation would not operate as an active transportation corridor, would not include any sources of GHG emissions and would ultimately facilitate implementation of active transportation on the Ultimate Trail Configuration. As such, Part 2 of the optional Interim Trail would be consistent with applicable GHG reduction plans, and this impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Operation of the Ultimate Trail Configuration, as part of implementing the optional Interim Trail, would be similar to that described above. Refer to the discussion above for Impact GHG-2 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Implementation of the optional Interim Trail, including all three parts, would provide an active transportation corridor, consistent with applicable GHG reduction plans. This impact would be **less than significant**. No mitigation is necessary.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The potential impact regarding consistency with applicable GHG reduction plans of the Project, with and without the optional Interim Trail, would be similar. The impact would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be the same the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because no change in operation would occur as a result of this design option, and it would still be a **less than significant** impact with no mitigation required.

Threshold C:	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death as a result of projected sea level rise or erosion

Impact GHG-3 THE PROJECT WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO SUBSTANTIAL RISK OF LOSS, INJURY, OR DEATH FROM PROJECTED SEA LEVEL RISE OR FLOODING. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

The potential for the Project to expose people or structures to substantial adverse effects from the impacts of climate change related to sea level rise and extreme storm events is addressed below.

The predicted area at risk from these hazards is based on data from the Coastal Resilience program web mapping tool (Nature Conservancy 2022). The predicted risks are mapped by The Nature Conservancy based on best available prediction tools and data. However, modeling cannot definitively predict the future effects of climate change. This analysis presents the most

conservative (highest risk) prediction of the effects of climate change, but actual future sea level rise and storm flooding may differ from mapped conditions.

The trail, including Segment 8 and the portion of Segment 9 that crosses Santa Cruz Harbor, is in potential future tidal inundation and flood hazard areas, and the portion of Segment 9 that crosses Leona Creek and Stream 1545 (which flow to Schwan Lagoon in Twin Lakes Beach State Park) is in the potential storm flooding area, as shown on **Figure 3.6-1** and **Figure 3.6-2** (Nature Conservancy 2022). Although the trail includes viaducts, a small clear span bridge over Pilkington Creek, and a cantilever on the Woods Lagoon Railroad Bridge, the trail would not introduce any new structures for human occupancy (enclosed structure wherein humans principally live or sleep, or used for commercial occupation on a regular basis [e.g., residences]) that would potentially require protection from sea level rise as part of climate adaptation efforts or that would result in displacement of residents in the event of storm flooding. Additionally, the new viaducts and bridges would be constructed at approximately the same elevation as the existing rail line elevated above existing water bodies.

Additionally, as discussed in Section 2.5, *Project Operation and Maintenance*, the Project would be subject to routine maintenance. Through routine maintenance and inspections, it is anticipated any areas of the trail that are experiencing excessive erosion or inundation would be identified. If necessary, appropriate actions would be taken to minimize the risk to trail users. Such actions could include trail segment closure and detour, structural improvements, or trail relocation, for which appropriate environmental review would be conducted.

Therefore, impacts related to sea level rise and storm flooding would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The potential for future exposure to tidal inundation and storm flooding would be similar on the optional Interim Trail as that on the Ultimate Trail Configuration. As stated above, Segment 8 and the portion of Segment 9 that crosses Santa Cruz Harbor are in potential future tidal inundation and flood hazard areas, and the portions that crosses Leona Creek and Stream 1545 are in the potential storm flooding area (Nature Conservancy 2022).

The optional Interim Trail would repurpose the existing rail line over Santa Cruz Harbor and the portions that cross Leona Creek and Stream 1545, rather than construct a cantilever on the existing Woods Lagoon Railroad Bridge (over the Santa Cruz Harbor) and viaducts adjacent to the rail line near Leona Creek and Stream 1545. However, the minor difference in trail location would not change potential risk for exposure to flooding. Additionally, trail maintenance for the optional Interim Trail would be similar and slightly less because there would be no viaducts to maintain. Therefore, impacts related to sea level rise and storm flooding would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

During this part of optional Interim Trail implementation, there would be no trail. Therefore, no users would be exposed to potential flooding. Therefore, **no impact** related to sea level rise and storm flooding would occur during Part 2 on optional Interim Trail implementation. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration as part of the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration. Refer to the discussion above for Impact GHG-3 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

When considering all three parts together, the risk of exposure to flood hazards would be similar to considering the parts individually, as described above. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project impacts related to the risk of exposure to flood hazards would be similar with or without the optional Interim Trail, with only minor differences in location during optional Interim Trail operation (Part 1). Exposure to flood hazards would be the same. With and without the optional Interim Trail, this impact would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be the same as the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The impact would be the same because no change in operation would occur as a result of this design option. The switchback would be located close to the harbor and may be at additional risk for flooding. However, this option does not include any structures and would be subject to the same routine maintenance. The impact would still be **less than significant** with no mitigation required.

3.6.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
GHG-1. The Project would not result in GHG emissions that would have a significant impact on the environment.	LTS	LTS Similar, slightly greater	LTS Similar, slightly greater	LTS Similar, slightly greater
GHG-2. The Project would be consistent with applicable GHG reduction plans.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
GHG-3. The Project would not expose people or structures to substantial risk of loss, injury, or death from projected sea level rise or flooding.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.7 Hazards and Hazardous Materials

This section analyzes the impacts associated with exposure to hazards and hazardous materials, including those related to hazardous materials use, transportation, and development on contaminated sites. **Table 3.7-1** presents a summary of *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* impacts regarding hazards and hazardous materials. Analysis throughout this section is based upon the Phase I Initial Site Assessment (ISA) conducted by Weber, Hayes & Associates on June 16, 2022 (WHA 2022).

Table 3.7-1 Summary of Project Impacts on Hazards and Hazardous Materials[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
HAZ-1. Construction of the Project would involve use, disposal, or transportation of hazardous materials, which could be accidentally released.	Less than Significant	None Required	Less than Significant
HAZ-2. Ground disturbance during construction could release soil contaminants.			
Ultimate Trail Configuration	Potentially Significant	HAZ-2a, HAZ-2b	Less than Significant
Optional Interim Trail	Potentially Significant	HAZ-2a, HAZ-2b, HAZ-2c	Less than Significant

[a] The impacts apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.7.1 Existing Conditions

Definitions

Hazardous Waste

The U.S. Environmental Protection Agency (USEPA) defines a "hazardous waste" as a substance that (1) may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating reversible illness, and (2) poses a substantial present or potential future hazard to human health or the environment when it is improperly treated, stored, transported, disposed of, or otherwise managed (40 FCR 261.10). Hazardous waste is also defined as ignitable, corrosive, explosive, or reactive and is identified by the USEPA by its form: solids, semi-solids, liquids, and gases. Producers of such wastes include private businesses and federal, state, and local government agencies. A material may also be classified as hazardous if it contains defined amounts of toxic chemicals. USEPA regulates the production and distribution of commercial and industrial chemicals to protect human health and the environment. USEPA also prepares and distributes information to inform the public about these chemicals and their effects, and provides guidance to manufacturers in pollution prevention measures, such as more efficient manufacturing processes and recycling used materials.

Hazard versus Risk

Public health is potentially at risk whenever hazardous materials have been used or where there could be exposure to such materials. Important to the setting and analyses presented in this section are the concepts of the "hazard" of these materials and the "risk" they pose to human health.

Exposure to some chemical substances may harm internal organs or systems in the human body, ranging from temporary effects to permanent disability or death. However, chemical materials may be corrosive or react with other substances to form other hazardous materials, but they are not considered toxic because organs or systems are not affected. Because toxic materials can result in adverse health effects, they are considered hazardous materials, but not all hazardous materials are necessarily "toxic." For purposes of the information and analyses presented in this section, the terms hazardous substances and hazardous materials are used interchangeably and include materials that are considered toxic.

The risk to human health is determined by the probability of exposure to a hazardous material and the severity of harm such exposure would pose. The likelihood and means of exposure, along with the inherent toxicity of a material, are used to determine the degree of risk to human health or the ecosystem. For example, a high probability of exposure to a low toxicity chemical would not necessarily pose an unacceptable human health or ecological risk, whereas a low probability of exposure to a very high toxicity chemical might. Various regulatory agencies, such as USEPA, California Environmental Protection Agency (CalEPA), State Water Resources Control Board, California Department of Toxic Substances Control (DTSC), and federal and state Occupational Safety and Health Administration (OSHA) are responsible for developing and/or enforcing risk-based standards to protect the public and the environment. Key regulations from each of these agencies are described in Section 3.7.2, *Regulatory Setting*.

Project Corridor Setting

Sensitive Receptors

The Project corridor is in an urbanized area of the City of Santa Cruz and Santa Cruz County. As described in the Monterey Bay Air Resources District's (MBARD's) 2008 California Environmental Quality Act (CEQA) Guidelines and in Section 3.2.1, *Existing Conditions*, in Section 3.2, *Air Quality*, 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. Residences are located throughout the Project corridor, primarily along Segment 9.

Hazards Associated with Historical Rail Uses

The Project corridor aligns with the Santa Cruz Branch Rail Line corridor. As described in Section 3.4.1, *Existing Conditions*, in Section 3.4, *Cultural Resources*, the Santa Cruz Branch Rail Line was developed and operated by Southern Pacific, which later merged with Union Pacific Railroad. The line provided both freight and passenger service by November 1883, connecting Watsonville, Aptos, Santa Cruz, and San Francisco. Potential hazards associated with historical rail uses include the presence of residual chemicals and the potential presence of asbestos and lead. A Phase I Environmental Site Assessment (ESA) was conducted for the entire length of the Southern Pacific Transportation Company's Davenport and Santa Cruz Beach Lines in 1996, which includes the entirety of the Project corridor. A follow up Phase II Soil Sampling of shallow soils was conducted to support the Santa Cruz County Regional Transportation Commission's (RTC's) purchase of the Santa Cruz Branch Rail Line in 2009. A Phase I ISA

(WHA 2022) for Segments 8 and 9 was conducted in 2022, but it did not include soil sampling, which will be conducted once the City approves the final alignment.

RESIDUAL CHEMICALS

Some historical railroad operations involved the use of chemicals that may result in present-day contamination. The most commonly reported contamination along rail lines comes from metals, herbicides and pesticides (e.g., lead arsenate), and constituents of oil or fuel (petroleum products). These chemicals have been associated with railroad operations. Arsenic in the soil along a rail right-of-way (ROW) may come from old railroad ties dipped in an arsenic solution, arsenic weed-control sprays, and arsenic-laced slag used as railroad bed fill. However, arsenic is also a naturally occurring substance, so arsenic present in the soil may be partially or entirely resulting from background concentrations.[1] Lubricating oil and diesel that dripped from the trains are likely sources of the petroleum product contaminants found along rail lines.

Targeted soil sampling along Segment 8 of the Project corridor where historically the Seabright Station was located, which contained a freight house, and other commercial facilities including a lumber yard, paint shop, and boat repair was conducted in 2005. Further systematic sampling through residential neighborhoods was conducted in 2005 and 2009. This Phase II Soil Sampling revealed elevated concentrations of arsenic distributed in the shallow soil (less than or equal to 1.5 feet below ground surface) along the rail line ROW in the Project corridor, at levels exceeding the calculated, site-specific background concentration of 14.4 milligrams/kilogram. The elevated level of arsenic is attributed to the potential application of arsenical herbicides to control weed growth along the rail line (AMEC Geomatrix 2009).

Additionally, the creosote used to protect the wooden railroad ties from decay is known to contain polynuclear aromatic hydrocarbons (PAHs). Some PAHs are known to be human carcinogens. Regarding the potential for creosote to leach into adjacent soil and groundwater, creosote is generally not a mobile compound. Therefore, the likelihood of creosote traveling far from a source area is considered low. While PAH concentrations were found to be above industrial environmental screening levels and background concentrations in one location sampled along the rail line (at the intersection of Beach Street and Riverside Avenue), that case was closed by DTSC and no significant risk remains (WHA 2022).

ASBESTOS AND LEAD

Existing structures along the rail line, such as crossing gates, switch boxes, and other small supporting enclosures or appurtenances, were constructed between 1903 and 1977 (RTC 2012). Due to their age, many structures may have been built with materials containing friable asbestos and lead-based paint (LBP).

Asbestos is made up of microscopic bundles of fibers that may become airborne when asbestos-containing materials (ACM) are damaged or disturbed. When these fibers get into the air they may be inhaled into the lungs, where they can cause significant health problems (USEPA 2022). Beginning in the late 1970s, asbestos was phased out for building and construction purposes.

Lead is a highly toxic metal that was used for many years as a component of consumer products. Lead is one of the most common hazards that humans are exposed to in their daily lives and may be present in hazardous concentrations in food, water, and air. Sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, urban dust, and secondary lead smelters.

[1] Naturally occurring arsenic is typically present at concentrations greater than risk-based screening criteria, which are derived based on an excess cancer risk level of $1x10^{-6}$. As such, it is appropriate to evaluate the presence of arsenic based on its background concentration and estimate the incremental risk for exposure to arsenic from concentrations greater than the background. Due to the range of arsenic concentrations along the rail line reflected in the Phase II ESA, it was uncertain what arsenic concentrations represented naturally occurring conditions or arsenic concentrations attributable to an impact. Therefore, additional samples were collected during the 2009 Phase II investigation.

Excessive exposure can result in the accumulation of lead in the bloodstream, soft tissues, and bones. Children are particularly susceptible to lead-related health problems as it is easily absorbed into developing systems and organs. Lead poisoning is the leading environmentally induced illness in children and continues to pose a potential public health risk. In 1978, the federal government required the reduction of lead in house paint to less than 0.06% lead. Lead paint used on older structures continues to pose a public health hazard unless and until it is abated. Inspection, testing, and removal (abatement) of lead-containing building materials must be performed by state-certified contractors required to comply with applicable health and safety and hazardous materials regulations.

Hazardous Materials Sites

A Radius Report was completed for the Project corridor by Environmental Data Resources on May 7, 2022, to identify features, historical uses, or activities that could be associated with environmental impairment of soil and groundwater along the Project corridor (WHA 2022). The Radius Report included review of historical topographical maps, historical aerial photographs, and publicly maintained and available records pertaining to on-site and nearby environmental investigations, chemical use, and the possible presence of underground storage tanks (USTs).

As shown in **Table 3.7-2,** the Radius Report identified eight potentially hazardous material sites on federal and state listings within a 1/8-mile radius of the Project corridor. An additional 15 sites were identified within a 0.25-mile radius of the Project corridor. No USEPA National Priority List or Superfund sites were identified in the Radius Report. An additional search of California GeoTracker in June 2022 did not reveal any additional sites. The eight sites within a 1/8-mile radius are listed in **Table 3.7-2** and discussed further below:

- **La Bahia Hotel Redevelopment Cleanup Program Site (CPS-SLIC): Open – Eligible for Closure 4-14-22.** This hotel property located on Beach Street was developed in 1926. In 2017 an ESA conducted on the property identified a recognized environmental condition based on the potential for LBP to have contaminated the soil on site. Subsequent extensive soil sampling confirmed that on-site soils contained elevated concentrations of lead (637 mg/kg), Arsenic (119 mg/kg), and Chlordane (15.1 mg/kg). Groundwater sampling conducted on site confirmed that there were no elevated concentrations of metals or volatile organic compounds. During redevelopment activities in January and February 2022, a remedial excavation was conducted to remove contaminated soils from the property. A total of 731 tons of hazardous waste soil was disposed of at a Class 1 landfill, and 3,373 tons of non-hazardous waste soil was disposed of at a Class 2 landfill. This site is currently in the process of closure.
- **Boardwalk Entry 2: Leaking Underground Storage Tank (LUST): Closed.** A former 32,000-gallon concrete tank (partially underground) historically stored crude oil from 1905 to 1950 at this location. Three soil remedial excavations have occurred in and around the former tank and piping locations, in 1972, 1990, and 2016/17. There is no record of tank removal from 1971 to 1973. In 2016, a total of 6,090 tons of soil was removed primarily containing total petroleum hydrocarbons (TPH) gas, diesel, and motor oil. Groundwater sampling conducted in 2020 showed elevated concentrations of TPH Diesel and heavy hydraulic oil range TPH at a location inside the railroad track area. The site was provided closure by the Central Coast Regional Water Quality Control Board in July 2021. This plume is less than 100 feet in length and is sufficiently defined and localized. The most recent soil and groundwater data meets the State Board's UST Low Threat Closure Policy.
- **Riverside Avenue Streetscape Improvement Project: LUST: Closed.** This LUST is located at the Riverside Avenue ROW extending from the intersection of Beach Street to 150 feet north of the Project corridor. During geotechnical borings in 2010, strong petroleum hydrocarbon odors and oily

sheen were observed in one boring. During 2011 a limited Phase II assessment detected high levels of TPH-R (recoverable) in groundwater from installed borings (2,100,000 micrograms per liter to 300,000 micrograms per liter). Monitoring wells were installed in 2011. Conclusions from two rounds of monitoring confirmed groundwater is impacted with TPH as diesel and motor oil at concentrations slightly higher than established environmental screening level thresholds. This site was closed via Low Threat Closure Policy in 2019. Soil contamination impacts along Riverside Avenue remain undefined.

- **Pacific Coast Producers: LUST: Closed.** In 1988 an underground fuel oil storage tank was closed in place due to the proximity to a load bearing wall. Contaminated soil was discovered around the tank location and base of the fill line. Soils containing 1,000 parts per million or higher were excavated and removed, leaving soils with less than 1,000 parts per million in place. Site was provided closure in September 1991.
- **Pacific Gas & Electric (PG&E) Santa Cruz Service Center: LUST: Closed.** The PG&E vehicle maintenance/service station for fleet vehicles is located at this site. In 1988 an underground waste oil tank was removed, and contaminated soil was encountered. The extent of the soil contamination was defined and appeared to only contain low levels of oil and grease. Groundwater was not impacted. The site was provided closure in June 1989.
- **Ledyard: LUST: Closed.** The Ledyard cold storage and distribution operation is located at this site. During the removal of two 10,000 gallon gasoline USTs in 1992 contamination was encountered in soil and groundwater. Free floating product was observed in groundwater. A number of groundwater and soil remediations were conducted between 1997 and 2011, including multiple groundwater monitoring events (16 years). The two groundwater monitoring wells closest to the railway corridor which were downgradient of the former tank locations never contained any detectable concentrations of TPH gas or benzene, toluene, ethylbenzene, xylene, or methyl tert-butyl ether. The site was provided closure via Low Threat Closure Policy in April 2014.
- **El Dorado Meat Company: LUST: Closed.** In December 1989, two leaking gasoline USTs (one 550-gallon and one 1,000-gallon tank) were removed from the site. Shallow groundwater and soil were impacted with gasoline, benzene, toluene, ethylbenzene, and xylenes all above state regulated thresholds. Later indoor and outdoor air testing revealed similar compounds detected above health-based screening thresholds. A No Further Action letter was issued in December 2014 following environmental investigation.
- **El Dorado Meat Company: Cleanup Program Site (CPS-SLIC): Open Site Assessment as of 3/11/2011.** Perchloroethylene (PCE) contamination was detected beneath the property, the source of which has never been identified, despite a robust source investigation done by Remediation Testing and Design in December 2011. Remediation Testing and Design recognized a potential off-site source being an adjacent property to the north at 1600 Brommer Street. The ultimate determination of the on-site or off-site nature of the PCE source is not relevant in this matter because the latest investigation has confirmed that the de minimis levels of the remaining PCE impacts discovered at the site are not a threat to human health or the environment. Additionally, Remediation Testing and Design concluded that the remaining PCE impacts are rapidly dissipating by natural processes and has recommend this case for closure. On March 3, 2018, the regulator confirmed that the PCE source has not been identified, and that the concentrations of PCE in soil gas beneath the site have significantly reduced from 2009 to 2011. The regulator was confident this case is near closure and believes the diminishing PCE plume does not pose a potential encroachment risk to adjoining property.

A review of the Project vicinity was also conducted to determine the presence of USTs (WHA 2022). A database search of generally historical regulatory records (including the Historical UST Registered Database, Statewide Environmental Evaluation and Planning System, California Facility Inventory Database, and Indian UST) identified 45 sites located within a 0.25-mile radius as having a current or historical record of permitted USTs. Additionally, a records search of RCRA-Small Quantity Generator, RCA-Large Quantity Generator, Facility Index System/Facility Registry System, Notify 65, and Environmental Data Resources Proprietary Records identified five sites within a 0.25-mile radius as having records showing generation and proper disposal of hazardous waste, typically a waste oil or oily waste. **Figure 3.7-1** illustrates contaminated sites with 0.25-mile radius of the Project corridor.

Table 3.7-2 Hazardous Materials Sites near the Project Corridor

Site Name	Site Location	Distance from Project Corridor	Database Reference
La Bahia Hotel Redevelopment	215 Beach Street	61 feet north-northwest	CPS-SLIC, RCRA-Nongen
Boardwalk Entry 2	400 Beach Street	50 feet south	LUST, Hist UST, CERS Tanks, CUPA, RCRA-Nongen, AST, HWTS, HAZNET
Riverside Avenue Streetscape Improvement Project	Riverside Avenue	120 feet north	LUST, Cortese, CERS
Pacific Coast Producers	104 Bronson Street	228 feet north	LUST, Cortese, CERS
PG&E Santa Cruz Service Center	615 7th Avenue	122 feet north-northwest	LUST, Cortese, CERS, UST, RCRA-LQG
Ledyard	1005 17th Avenue	140 feet north	LUST, Cortese, CERS, AST, UST
El Dorado Meat Company	1037 17th Avenue	370 feet north	LUST, CPS-SLIC, Cortese, UST

CPS-SLIC: Cleanup Program Sites-Spills, Leaks, Investigations, and Cleanups; RCRA-Nongen: Resource Conservation and Recovery Act-Non Generators; LUST: Leaking Underground Storage Tanks; Hist UST: Historical UST Registered Database; CERS: California Environmental Reporting System; CUPA: Certified Unified Program Agency; AST: aboveground storage tanks; HWTS: Hazardous Waste Tracking System; CERS: California Environmental Reporting System: RCRA-LQG: Resource Conservation and Recovery Act-Large Quantity Generators

Surrounding Sites

1. 123 Center Street - Former Bulk Plant - CPS-SLIC - CLOSED
2. 303 Pacific Street - Chevron Station - LUST - CLOSED
3. 35 Front Street - Canfield Property - LUST - CLOSED
4. 215 Beach Street - La Bahia Hotel Redevelop - CPS-SLIC- OPEN/EFC
5. Riverside Ave - Riverside Ave Streetscape Proj - LUST - CLOSED
6. 400 Beach Street - Boardwalk Entry 2 - LUST - CLOSED
7. Private Residence - Private Residence - LUST - CLOSED
8. 104 Bronson Street - Pacific Coast Producers - LUST - CLOSED
9. 727 Seabright Ave - Blencoe Property - LUST - CLOSED
10. 615 7th Ave - PG&E SC Service Center - LUST - CLOSED
11. 1005 17th Ave - Ledyard Co. - LUST CLOSED
12. 1037 17th Ave - Austin Property (PCE Plume) - CPS-SLIC - OPEN
13. 1037 17th Ave - Former El Dorado Meat Co. - LUST - CLOSED
14. 1200 17th Ave - SC Liquor & Food - LUST - CLOSED
15. 1305 17th Ave - California Tube Labs - CPS-SLIC - CLOSED

These are primarily historical and ongoing fuel and chemical release and/or hazardous waste generator sites within a 1/4-mile radius around the subject Site. See Section 5 of the report and Appendix C for further details. Please note that we have reviewed the place" ment of these regulated sites and adjusted some that were shown inaccurately on the State GeoTracker website.

Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Weber, Hayes & Associates 2022.

Harris & Associates

N

0 450 900
Feet

Figure 3.7-1
Contaminated Sites in Project Vicinity

Coastal Rail Trail Segments 8 and 9

Hazardous Materials Transport

Both the USEPA and U.S. Department of Transportation (USDOT) regulate the transportation of hazardous waste and material, including transport via rail and highway. The USEPA administers permitting, tracking, reporting, and operations requirements established by the Resource Conservation and Recovery Act (RCRA). The USDOT regulates the transportation of hazardous materials through implementation of the Hazardous Materials Transportation Act. This Act administers container design and labeling and driver training requirements. Established regulations are intended to track and manage the safe interstate transportation of hazardous materials and waste.

The Santa Cruz Branch Line was historically used for transporting lumber, quarried material, and agricultural products. Currently, there is no daily freight, and passenger service is limited to seasonal recreational service along Segment 8, where Roaring Camp has seasonal service (twice daily during the summer) between Felton and the Santa Cruz Beach Boardwalk. However, there is the possibility that an accidental spill of hazardous materials occurred when the railway was active. According to a Phase I ESA of the rail line (Geomatrix Consultants 1997), trains along the former Santa Cruz Branch Line occasionally derailed, but only one derailment was reported to have resulted in chemical spillage, and this was outside the Project corridor.

Regulation of hazardous materials transport on state highways falls under federal legislation, but authority is relegated to various state and local agencies focused on specific aspects of hazardous materials and transportation. The Hazardous Waste Control Act establishes the California Department of Public Health as the lead agency in charge of the implementation of the RCRA program. State and local agencies such as the California Highway Patrol, California Department of Transportation (Caltrans), and city and county fire departments are responsible to enforce federal and state regulations and to respond to hazardous materials transport emergencies. The California Highway Patrol establishes federal and state hazardous material truck routes, and has lead responsibility over hazardous material spills on state highways. Truck routes are designed to provide access to areas that require truck service (primarily commercial and industrial areas).

No truck routes, namely Highway 1, are within 0.75 mile of the Project corridor.

Plugged, Abandoned, and Unrecorded Wells

An abandoned well is a well that has halted operation and is undergoing the process of being plugged. Once plugged, the well is officially decommissioned. An orphaned well has no responsible party that authorities can mandate to properly abandon the well. Plugged, abandoned, and unrecorded wells can cause environmental damage by leaking pollutants into the atmosphere or water supplies. Important determinants of how much orphaned or abandoned wells impact the environment include the techniques used and precautions taken when first drilling the well, whether it is a gas well, oil well, or combined oil and gas well, and if and how the well was sealed. If wells are not properly sealed when orphaned or abandoned, oil and gas can contaminate groundwater. It is also possible for orphaned and abandoned wells to be significant emitters of methane into the atmosphere. Furthermore, brine present in wells drilled into certain geologic formations can contain some radioactive and toxic substances that contaminate groundwater if the well leaks. Plugging wells can reduce the risk of explosions and protect groundwater, but this does not always prevent methane emissions. In the United States, it is possible for wells to have been orphaned or abandoned for over a century, and information about them can be difficult to locate, if it exists at all.

According to the Well Finder search tool hosted by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources, no abandoned or active wells are located within 1,000 feet of the Project corridor (DOGGR 2022).

Fire Hazards

Wildfires are large-scale brush and grass fires in undeveloped areas. Wildfires are often caused by human activities, and can result in loss of valuable wildlife habitat, soil erosion, and damage to life and property. Wildland fires are influenced by three factors: fuel, weather, and topography. Wildfire spread depends on the type of fuel involved (grass, brush, and trees). Weather influences wildland fire behavior with factors such as wind, relative humidity, temperature, fuel moisture, and possibly lightning. Several of these factors can modify the rate a fire will burn, while topography is the largest influence on fire severity (Santa Cruz County 2015).

The Project corridor is mapped as a Local Responsibility Area by the California Department of Forestry and Fire Protection (CAL FIRE), due to the heavily urbanized nature of the area (CAL FIRE 2007). The Project corridor is not within an identified State Responsibility Area or lands classified as a very high hazard severity zone, according to the Fire Hazard Severity Zone Maps prepared by California Department of Forestry and Fire Protection's Fire and Resource Assessment Program (CAL FIRE 2008).

Emergency Response

The California Emergency Services Act provides the basic authority for conducting emergency operations following proclamations of emergencies by the Governor or other local authority. All local emergency plans are extensions of the California Emergency Plan (CalOES 2017). Santa Cruz County and the City of Santa Cruz are located in Mutual Aid Region II, the Coastal Region, one of six mutual aid regions that exist in California.

Santa Cruz County Local Hazard Mitigation Plan and Community Emergency Response Team

In September 2015, the County of Santa Cruz approved a Local Hazard Mitigation Plan (LHMP), consistent with state and local guidelines. The LHMP establishes a basis for the coordination, management, and operation of critical resources and describes the local government's authority, responsibilities, and functions. During an emergency, the County will collaborate with federal, state, and local law enforcement agencies, emergency health providers, the American Red Cross, and private industries. The County of Santa Cruz has also established a Community Emergency Response Team (CERT), a group of citizens specially trained to provide immediate assistance in the event of an emergency until agencies are able to respond. The training program includes sessions on disaster preparedness, first aid, fire safety, disaster medical operations, search and rescue, communications and teamwork, and more.

National Incident Management System Implementation

Homeland Security Presidential Directive 5 identifies steps for improved coordination in response to incidents and requires a National Response Plan and a National Incident Management System (NIMS). The NIMS provides a comprehensive, national approach to incident management developed to improve the coordination of federal, state, and local emergency response nationwide. The state NIMS Advisory Committee, part of the California Office of Emergency Services (CalOES) offers the

"California Implementation Guidelines for the National Incident Management System" to assist local governments and other entities to incorporate NIMS into already existing programs, plans, training and exercises (CalOES 2006).

MUTUAL AID AGREEMENTS

The foundation of California's emergency planning and response is a statewide mutual aid system designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions when their own resources prove to be inadequate to cope with a given situation. Each of the six mutual aid regions in the state consists of counties designated by CalOES, with Santa Cruz County in Region II, the Coastal Region.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code, Sections 8555–8561) requires signatories to the agreement to prepare operational plans for their jurisdictions and outside their areas. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. This agreement was signed in 1950 by state officials, representatives of all state agencies, all political subdivisions, and all fire districts.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The act provides the basic authority for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a city manager. The provisions of the act are further reflected and expanded upon by appropriate local emergency ordinances. The act also describes the function and operations of government at all levels during extraordinary emergencies, including war (CalOES 2014). Therefore, local emergency plans are considered extensions of the California Emergency Plan.

CAL FIRE works in cooperation with the CalOES, along with neighboring state governments, through a network of mutual aid agreements to fight wildland fires. CAL FIRE is the largest multipurpose fire protection agency in the United States, responsible for wildland fire protection of over 31 million acres of California's privately-owned watershed lands, and services in 36 of the state's 58 counties via contracts with local governments (CAL FIRE 2022a). CAL FIRE responds to over 8,800 wildland fires each year and commands a force of approximately 5,190 full-time fire professionals, 2,870 seasonal personnel, 1,331 mission support position, and 3,000 inmates, wards, California Conservation Corps Members, and California National Guard members, as well as approximately 600 volunteers. In addition to its nearly 360 fire engines, CAL FIRE maintains a significant fleet of aircraft that includes 23 air tankers, 18 air tactical planes, and 12 helicopters (CAL FIRE 2022b).

3.7.2 Regulatory Setting

This section describes the federal, state, regional, and local plans, policies, and laws relevant to hazards and hazardous materials for the Project.

Federal

U.S. Environmental Protection Agency

USEPA is responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Federal regulations are codified primarily in Title 40 of the Federal Code of Regulations. The primary legislation includes the RCRA and the Comprehensive Environmental Response,

Compensation and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act and the Emergency Planning and Community Right-to-Know (Superfund Amendments and Reauthorization Act, Title III). These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, transport, or dispose of hazardous materials.

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1947 assigned responsibility for regulating pesticides to the U.S. Department of Agriculture, but the Federal Environmental Pesticide Control Act was passed in 1972 and transferred this responsibility to USEPA. FIFRA has undergone several amendments to prohibit different formulas and mixtures in an effort to protect the environment and public health. FIFRA established registration requirements for all pesticides and initiated a rigorous testing procedure that all pesticides must undergo in order to be permitted for use. FIFRA ensures that the use of a permitted pesticide "will not generally cause unreasonable adverse effects on the environment." FIFRA defines the term 'unreasonable adverse effects on the environment' to, in part, mean "any unreasonable risk to man or the environment, taking into account the economic, social, and environmental costs and benefits of the use of any pesticide" (USEPA 2021).

U.S. Department of Transportation

The Hazardous Materials Transportation Act of 1975 is the major transportation-related statute regulating the transportation of hazardous cargo. As mentioned under Section 3.7.1, *Existing Conditions*, the act empowers the USDOT with regulatory and enforcement authority to provide adequate protection against the risks to life and property inherent in the transportation of hazardous material in commerce. For materials designated as hazardous, specific requirements pertaining to the packaging, labeling, and transportation apply to any person or business transporting them.

State

California Environmental Protection Agency

CalEPA has broad jurisdiction over hazardous materials management in the state. Under CalEPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Along with the DTSC, the State Water Resources Control Board is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. State Water Resources Control Board regulations are contained in Title 27 of the California Code of Regulations (CCR). Title 22 of the CCR contains additional state regulations applicable to hazardous materials. Title 26 of the CCR compiles those sections or titles of the CCR applicable to hazardous materials.

In January 1996, CalEPA adopted regulations implementing a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, USTs, aboveground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code Hazardous Materials Management Plans and inventories. The program is implemented at the local level by a local agency—the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. The CUPA that has jurisdiction over the Project corridor is Santa Cruz County Environmental Health.

California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous materials and

to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on site, to prepare an emergency response plan, and to train employees to use the materials safely.

California Department of Toxic Substances Control

DTSC regulates hazardous waste in California primarily under the authority of the federal RCRA, and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. In addition, DTSC reviews and monitors legislation to ensure that the legislation reflects DTSC goals. From these laws, DTSC major program areas develop regulations and consistent program policies and procedures. The regulations spell out what those who handle hazardous waste must do to comply with the laws. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. As such, management of hazardous waste in the County is regulated by the DTSC, and enforced by Santa Cruz County Environmental Health as the CUPA, to ensure compliance with state and federal requirements pertaining to hazardous waste.

California law provides the general framework for regulation of hazardous wastes by the Hazardous Waste Control Act, passed in 1972. DTSC is the state's lead agency in implementing the act. The act provides for state regulation of existing hazardous waste facilities, which include "any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous wastes," and requires permits for, and inspections of, facilities involved in generation and/or treatment, storage, and disposal of hazardous wastes. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the act.

A "Uniform Hazardous Waste Manifest" is required by DTSC and must accompany most hazardous waste before transporting any waste off-site. The manifest travels with the hazardous waste from the point of generation, through transportation, to the final treatment, storage, and disposal facility. If a discharge or spill of hazardous waste occurs during transportation, the transporter is required to take appropriate immediate action to protect human health and the environment (e.g., notify local authorities, dike the discharge area), and shall be responsible for the discharge/cleanup, pursuant to Title 22 of the CCR, Sections 66263.30 and 66263.31.

Although numerous state policies dealing with hazardous waste materials exist, the most comprehensive is the Tanner Act (AB 2948) adopted in 1986. The Tanner Act governs the preparation of Hazardous Materials Management Plans and the siting of hazardous waste facilities in the state. The act also mandates the adoption of a Hazardous Waste Management Plan by every county in the state that must include provisions defining (1) the planning process for waste management, (2) the permit process for new and expanded facilities, and (3) the appeal process to the state available for certain local decisions. The California Department of Conservation's Division of Oil, Gas, and Geothermal Resources oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells.

California Division of Occupational Safety and Health

The California Occupational Safety and Health Administration (CalOSHA) is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling

and use of hazardous materials. Among other requirements, CalOSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers are to appropriately label containers, Material Safety Datasheets are to be available in the workplace, and employers are to properly train workers.

California Office of Emergency Services

The CalOES oversees the California Accidental Release Prevention Program (CalARP) (19 CCR Division 2, Chapter 4.5), which covers certain businesses that store or handle more than a certain volume of specific regulated substances at their facilities. The CalARP program regulations became effective on January 1, 1997, and include the provisions of the Federal Accidental Release Prevention program (40 CFR Part 68) with certain additions specific to California pursuant to Article 2, Chapter 6.95, of the Health and Safety Code.

The list of regulated substances is found in Article 8, Section 2770.5, of the CalARP program regulations. Businesses that use a regulated substance above the noted threshold quantity must implement an accidental release prevention program, and some may be required to complete a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The purpose of an RMP is to decrease the risk of an off-site release of a regulated substance that might harm the surrounding environment and community. An RMP includes the following components: safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity to sensitive populations located in schools, residential areas, general acute care hospitals, long-term healthcare facilities, and child daycare facilities, and must also consider external events such as seismic activity. The CalARP program is implemented at the local government level by Unified Program Agencies.

California Department of Pesticide Regulation

The California Department of Pesticide Regulation (DPR) monitors the use of pesticides through evaluation and registration of pesticide products before sale or use in California. DPR also evaluates health impacts of pesticides through risk assessment and illness surveillance. DPR conducts comprehensive assessments of pesticide risks to all populations from exposure via air, water, and food, and in the home and workplace. All reported pesticide-related illnesses are investigated and DPR uses this data to evaluate its regulatory program and to refine applicable safety rules. DPR additionally monitors potential health and environmental impacts of previously registered pesticides, helping find ways to prevent future contamination.

Caltrans Local Assistance Procedures

The Caltrans Local Assistance Procedures Manual, Chapter 14, *Utility Relocation*, provides guidelines to local agencies performing ROW utility relocations on projects outside the State Highway System and financed with federal funds. The utility procedures contained therein apply when relocating public utility facilities that serve the general public, whereas service connections and private utilities are handled through ROW acquisition under Cost to Cure (23 CFR 710.203), and Uniform Act (49 CFR 24: Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally-Assisted Programs).

Regional

Monterey Bay Air Resources District

The MBARD implements the federal National Emission Standards for Hazardous Air Pollutants and Maximum Achievable Control Technology requirements through the federal operating permit program, pursuant to MBARD Rule 218. In addition, MBARD's permitting program includes a "Best Control Technology" review under MBARD Rule 1000, Permit Guidelines and Requirements for Sources Emitting Toxic Air Contaminants. This rule covers proposed new or reconstructed major sources of federal hazardous air pollutants, toxic air contaminants, and carcinogenic toxic air contaminants.

In compliance with state law, MBARD also administers the Assembly Bill 2588 Air Toxics "Hotspots" Program. Facilities must report their toxic air contaminant emissions, and if MBARD determines that the facility poses a potential public health risk, the facility must perform a health risk assessment. A health risk assessment includes an analysis of toxic air contaminant emissions and characterizes human health risks as a result of the estimated exposures. If the estimated health risks exceed thresholds levels, the public in the affected area must be notified and steps taken to reduce emissions.

Local

Santa Cruz County General Plan

The Santa Cruz County General Plan, Public Safety and Noise Element, contains objectives and policies related to hazardous and toxic materials, hazardous waste management, and fire hazards. Objective 6.5 and Policy 6.5.7 and 6.5.8 require that adequate fire detection and suppression is available for all facilities. Objective 6.6 and Policy 6.6.1 note the continuation of the County's hazardous materials ordinance to minimize discharge and release of hazardous and toxic materials and waste. These objectives and policies are listed below (Santa Cruz County 1994):

- **Policy 6.5.7: Certification of Adequate Fire Protection Prior to Permit Approval**. Require all land divisions, multi-unit residential complexes, commercial and industrial complexes, public facilities and critical utilities to obtain certification from the appropriate fire protection agency that adequate fire protection is available, prior to permit approval.
- **Policy 6.5.8: Public Facilities within Critical Fire Hazard Areas.** Discourage location of public facilities and critical utilities in Critical Fire Hazard Areas. When unavoidable, special precautions shall be taken to ensure the safety and uninterrupted operation of these facilities.
- **Policy 6.6.1: Hazardous Materials Ordinance**. Maintain the County's Hazardous Materials ordinance, placing on users of hazardous and toxic materials the obligation to eliminate or minimize the use of such materials wherever possible, and in all cases to minimize the release, emission, or discharge of hazardous materials to the environment, and properly to handle all hazardous materials and to disclose their whereabouts. Further, maintain the County's ordinance relating to ozone-depleting compounds. Ensure that any amendment of existing ordinance provisions is based on a finding that the amendments will provide protection to the environment and the community against toxic hazards that is equal to or stronger than the existing provisions.

Santa Cruz County Municipal Code

Chapter 7.100 of the County's Municipal Code regulates hazardous materials, hazardous waste, and USTs in the County. The ordinance is intended to protect human health, safety, and the environment by promoting best available industrial processes and best available practical control technology to minimize or eliminate the use of hazardous materials in the County, and minimize or eliminate potential contamination by hazardous materials. The ordinance requires that any permitted use of hazardous materials is obligated to strictly control discharges and releases. The ordinance further requires that hazardous materials users monitor any discharges into the environment and keep records on the effectiveness of their hazardous materials management practices as a means of enforcing the obligations established by this chapter. Santa Cruz County Environmental Health is the CUPA responsible for enforcing the Hazardous Materials-Hazardous Waste-Underground Storage Tanks Ordinance, along with state and federal regulations.

For any construction in the public ROW, the County requires an encroachment permit. The associated fee and permit process are described in the Santa Cruz County Code, Chapter 9.70, *Streets and Roads*. As part of the encroachment permit process, if pedestrian, bicycle, or vehicle traffic would be impacted, a traffic control plan must be provided. Several provisions are provided on the encroachment permit application

City of Santa Cruz Local Hazard Mitigation Plan

The City of Santa Cruz 2018–2023 LHMP, which is the second 5-year update of the City's original 2007 LHMP, is consistent with state and local guidelines and Federal Emergency Management Agency approved. The goals of the LHMP include avoiding and reducing potential loss of life, injury, and economic damage from various disasters and increasing the City's ability to serve the community during and after hazard events (City of Santa Cruz 2018).

City of Santa Cruz General Plan

Chapter 8 of the City's General Plan addresses hazards, safety, and noise and discusses both human-created and natural hazards in the City. Goal HZ1 and associated policies are related to emergency and disaster readiness. Goal HZ4 and associated policies are intended to reduce danger and impacts from hazardous materials. Relevant policies under these goals include the following:

- **Policy HZ1.2.7:** Coordinate emergency planning efforts with the Santa Cruz County Office of Emergency Services.
- **Policy HZ1.5.6:** Abate hazardous buildings and conditions.
- **Policy HZ4.1:** Regulate hazardous wastes with respect to potential leakage, explosions, fires, escape of harmful gases, or formation of new hazardous substances.
- **Policy HZ4.1.1:** Work with the County's Environmental Health Services, the County, and other groups in adopting, implementing, and updating a countywide Hazardous Waste Management Plan and Joint County Hazardous Materials Ocean Response Plan.
- **Policy HZ4.1.2:** Establish guidelines for hours, methods, routes, and amounts of hazardous waste being transported through the City.
- **Policy HZ4.1.3:** Monitor the City-County agreement for administering and enforcing hazardous materials regulations, and recommend any needed changes.

- **Policy HZ4.1.4:** Reduce the use of toxic materials in the community and prevent their disposal into the air, water, or soil.
- **Policy HZ4.2:** Ensure proper handling and disposal of hazardous waste.
- **Policy HZ4.3:** Ensure that resources are available for quick and proper response to hazardous-waste emergencies.
- **Policy HZ4.3.1:** Train personnel and ensure that resources are available to quickly respond to hazardous-waste emergencies.
- **Policy HZ4.4:** Reduce the risk of exposure to hazardous materials from sites being developed or redeveloped.

City of Santa Cruz Municipal Code

The City's adopted Chapter 7.100 of County's Municipal Code is described above.

For any construction in the public ROW, the City requires an encroachment permit pursuant to the City's Municipal Code. The associated fee and permit process are described in City's Municipal Code, Chapter 15.34, *Encroachment Permits*. Permits for construction in the public ROW require a City-approved traffic control plan showing the intended placement of all necessary signage and traffic control devices used to direct traffic around the site. The traffic control plan should accomplish the following:

- Conform to the California Manual on Uniform Traffic Control Devices (see Part 6 – Temporary Traffic Control).
- Be designed by a responsible representative of the permit applicant knowledgeable in the principles of proper temporary traffic control.
- Clearly show the work area.
- Include traffic control provisions to accommodate pedestrian, bicycle, and vehicular traffic that may be affected.
- Show any "no parking" areas needed to accommodate traffic and work in the work zone.
- If construction requires multiple phased traffic control configurations, a traffic control plan for each phase should be submitted.

Section 18.45.015 of the City's Municipal Code regulates construction site management, which dictates that access roads and entrances must be constructed to minimize the tracking of hazardous materials into roadways or storm drains. Additionally, hazardous leaks, spills, and drips must be contained and cleaned up as quickly as possible.

Section 19.05.010 of the City's Municipal Code adopted the 2019 California Fire Code with local amendments that regulate and govern explosion hazards arising from the storage, handling, and use of hazardous substances.

Santa Cruz County Environmental Health

Santa Cruz County Environmental Health is designated by CalEPA as the CUPA within the geographic boundaries of the County and is responsible for enforcing the local ordinance and state laws pertaining to use and storage of hazardous materials, including the issuance and administration of Hazardous Materials Management Plans (Santa Cruz County 2022).

The RTC and Santa Cruz County Environmental Health have entered into a Remedial Action Agreement for the rail line ROW, whereby Santa Cruz County Environmental Health is the regulatory oversight agency for characterization and potential remedial action under Sections 101480 through 101490 of the California Health and Safety Code, and the Remedial Action Agreement is incorporated by this reference dated June 13, 2017.

3.7.3 Methodology and Significance Thresholds

Methodology

As described under Section 3.7.1, a Radius Report was completed for the Project corridor to identify features, historical uses, or activities that could be associated with environmental impairment of soil and groundwater along the Project corridor. The Radius Report included review of historical topographical maps, historical aerial photographs, and publicly maintained and available records pertaining to on-site and nearby environmental investigations, chemical usage, and the possible presence of USTs. The results of this report were analyzed to identify release listings near the Project corridor that could pose a potential threat from excavation and grading activities during construction of the Project.

Assessment of potential impacts is based on the results of the Radius Report and the 2022 Phase I ISA (WHA 2022), which includes a review of prior studies conducted along the corridor, including the Phase I and II ESAs along the Project corridor (Geomatrix Consultants 1997; AMEC Geomatrix 2009).

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of hazards and hazardous materials, and the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For purposes of this Environmental Impact Report (EIR), a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

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 reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
C. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
D. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, 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, result in a safety hazard or excessive noise 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, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

The Project corridor is not near an airport and would not interfere with adopted emergency response plans. Therefore, potential impacts related to airport hazards and consistency with emergency response plans (Thresholds E and F) were found to be less than significant. Additionally, the potential impact related to exposing people or structures to a significant risk involving wildland fires (Threshold G) was found to be less than significant. Therefore, these impact discussions are in Section 3.15, *Effects Found to be Less than Significant*, under Section 3.15.5, *Hazards and Hazardous Materials*.

3.7.4 Project Impact Analysis

Threshold A:	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
Threshold 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.

Impact HAZ-1 CONSTRUCTION OF THE PROJECT WOULD INVOLVE USE, DISPOSAL, OR TRANSPORTATION OF HAZARDOUS MATERIALS, WHICH COULD BE ACCIDENTALLY RELEASED. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Construction activities associated with the Project would involve the use of heavy equipment, which would contain fuels and oils, and various other products. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used along the Project corridor and transported to and from the site during construction. However, the Project contractor would be required to comply with California Health and Safety Code, Chapter 6.95, which would minimize risks from routine use, transport, handling, storage, disposal, and release of hazardous materials. Additionally, Section 18.45.015 of the City's Municipal Code regulates construction site management, including mandating that hazardous leaks, spills, and drips be contained and cleaned up as quickly as possible.

The Project corridor is located adjacent to potentially contaminated soils from historical railroad uses and nearby hazardous materials sites, which may need to be removed from the site during Project construction. As described in Section 3.2, construction activities would require an estimated five truck trips a day to dispose of soils at Santa Cruz Resource Recovery Facility, approximately 4.5 miles west of the Project corridor. If the concentration of contamination found in the soil to be hauled off-site would require disposal at a Waste Discharge Requirement Class II facility, the contaminated soil would be hauled to the Altamont Landfill or the Vasco Road Sanitary Landfill, both located in Livermore approximately 58 miles northeast of the Project corridor. If the concentration of contamination found in the soil to be hauled off-site would require disposal at a Waste Discharge Requirement Class III facility, the contaminated soil would be hauled to the Forward Landfill, located in Stockton

approximately 77 miles northeast of the Project corridor. Therefore, it is possible that hazardous soils could be released through accidental conditions during transportation to the various landfills.

However, the transport and disposal of hazardous materials would be subject to federal, state, and local regulations pertaining to the transport, use, storage, and disposal of hazardous materials. The Toxic Substances Control Act and the Resource Conversation and Recovery Act, Hazardous Waste Control Act, and the City of Santa Cruz LHMP, as discussed in Section 3.7.2, would minimize risks associated with the storage, disposal, and transport of hazardous materials. The U.S. DOT, Pipeline and Hazardous Materials Safety Administration, regulates the transportation of hazardous materials, as described in Title 49 of the CFR and Title 13 of the CCR. This provides additional regulation for the transportation of hazardous materials by designating appropriate hazard labels shipping preparation, vehicle loading, and hazardous materials registration, among other requirements. Documentation of compliance with hazardous materials regulations codified in Titles 8, 22, and 26 of the CCR is required for all hazardous materials and hazardous waste transport. Additionally, the California Building and Fire Code requirements detail standards for the safe management of materials that present a moderate explosion hazard, high fire or physical hazard, or health hazards. Compliance with all applicable federal, state, and local requirements related to the storage, transport, and use of hazardous materials would maximize containment through safe handling and storage practices described above and provide for prompt and effective cleanup if an accidental release occurs. Additionally, impacts of moving hazardous materials would be limited with accordance to applicable DTSC and CalOSHA regulations.

The Project corridor contains structures such as crossing gates, switch boxes, and other small supporting enclosures or appurtenances that may include ACMs or LBPs. Demolition of these structures as part of the Project could result in health hazard impacts to workers if not remediated prior to construction activities. However, lead-based materials and asbestos exposure are regulated by CalOSHA. CCR Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials such that exposure levels would not exceed CalOSHA standards. Under this rule, construction workers (and by extension, neighboring properties) would not likely be exposed to lead at concentrations greater than 50 micrograms per cubic meter of air averaged over an eight-hour period, and regulations require that exposure must be reduced to lower concentrations if the workday exceeds 8 hours. Similarly, CCR Section 1529 sets requirements for ACM exposure assessments and monitoring, methods of complying with exposure requirements, safety wear, communication of hazards, and medical examination of workers. Development of the Project would also be required to adhere to MBARD Regulation IV, Rule 439, which governs the proper handling and disposal of ACM for demolition, renovation, and manufacturing activities in the Monterrey Bay Area, and CalOSHA regulations regarding lead-based materials. Additional MBARD Rule 424 would apply, which require that the owner or operator of any demolition or renovation activity perform an asbestos survey prior to demolition. CCR Section 1532.1 requires testing, monitoring, containment, and disposal of lead-based materials, such that exposure levels do not exceed CalOSHA standards. Compliance with applicable standards would ensure impacts related to hazardous materials are minimized.

With adherence to federal, state, and local regulations, potential impacts from construction activities and hazardous material transfer during Project construction would be **less than significant**. Additionally, Mitigation Measure HAZ-2a and HAZ-2b, which are identified below for Impact HAZ-2, requires soil sampling and remediation measures that would further reduce this less than significant impact.

Therefore, the Project would not likely create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, nor through reasonably

foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment. This impact would be **less than significant**. No mitigation is required.

Operation

Once constructed, the Project corridor would be used for active transportation and recreation (e.g., bicyclists, pedestrians), and thus would not operate in a way that could result in accidental or reasonably foreseeable release of hazardous materials. Therefore, there would be **no impact** from the risk of accidental release of hazardous materials during operation.

In summary, Impact HAZ-1 would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Like the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration),* potential impacts would be from construction, not operation, of the trail.

Construction impacts from implementation of the Interim Trail (Part 1) of *Optional First Phase: Trail on the Rail Line (Interim Trail)* would be substantially greater than those identified or the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, because there would be substantially more materials containing ACMs and LBPs that would need to be transported to disposal sites. Unlike the Ultimate Trail Configuration, the Interim Trail would also involve the removal of existing structures and equipment, including the tracks, ties, and rail crossings including crossing gates, switch boxes, and other small supporting enclosures or appurtenances, which would have been originally constructed between 1903 and 1977 (RTC 2012). Based on the age of these structures, crossing improvements could involve the disturbance of LBP or ACMs.

Removal of the railroad tracks would follow the required Surface Transportation Board requirements for abandonment and track removal, including remediation for hazardous materials. Removing the tracks entails disposal of thousands of railroad ties that were treated with creosote, also referred to as treated wood waste. This would result in substantially more transport and disposal of hazardous materials, thus increasing the risk of accidental release into the environment. Following the removal of railroad tracks, ties, and other appurtenances, the multi-use trail under the Interim Trail option would be constructed on the track bed and regraded ballast.

Similar to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, the optional Interim Trail would be required to comply with existing federal, state, and local regulations related to the transport, storage, disposal, and use of hazardous materials. Therefore, although there would be a greater risk, the impact would be **less than significant**. No mitigation is required.

Additionally, Mitigation Measures HAZ-2a and HAZ-2b, which are identified below for Impact HAZ-2, requires soil sampling and remediation measures that would further reduce this less than significant impact.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would remove the trail and re-install the rail tracks/ties on the rail bed. The potential impact would be similar to but slightly greater than for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Demolition of the Interim Trail and rebuilding of the rail line would require substantially more

material movement (from demolishing the paved trail) than the Ultimate Trail Configuration, increasing the potential for accident or foreseeable upset of hazardous materials. However, the materials being transported for Interim Trail Part 2 are primarily pavement and not as hazardous as the materials being transported for Interim Trail Part 1, which include tracks, ties, and other rail infrastructure. With adherence to federal, state, and local regulations pertaining to the transport, use, storage, and disposal of hazardous materials such as the Toxic Substances Control Act and the Resource Conversation and Recovery Act, Hazardous Waste Control Act, and the City of Santa Cruz LHMP, this impact would be **less than significant**. No mitigation is required.

Additionally, Mitigation Measures HAZ-2a and HAZ-2b, which are identified below for Impact HAZ-2, require soil sampling and remediation measures that would further reduce this less than significant impact.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of the optional Interim Trail would result in potential impacts similar to those described above for Impact HAZ-1 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the optional Interim Trail (Parts 1, 2, 3) would be an overall increase in the use, disposal, transport, and storage of hazardous materials, which would result in an overall increased risk of accidental and unanticipated spills and exposure. However, all three parts of the Interim Trail would be required to comply with federal, state, and local regulations. Therefore, the impacts would be **less than significant**. No mitigation is required. Additionally, implementation of Mitigation Measures HAZ-2a and HAZ-2b required for Impact HAZ-2 would further reduce the risk and potential impact by requiring for soil sampling and remediation measures.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would have greater impacts with respect to the potential release of hazardous materials due to upset or accident conditions than the Proposed Project without the Interim Trail, because the Interim Trail would also include removal of the rail tracks, ties and other infrastructure (Part 1) and removal of the Interim Trail and rebuilding of the trail (Part 2). Therefore, there would be increased use, disposal, transport, and storage of hazardous materials, which would increase the potential for accidental and unanticipated spills and exposure. Specifically, removal and disposal of the existing rail line (Part 1) would require movement of materials containing LBPs and ACMs that would not be disturbed for construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. However, the Proposed Project with and without the optional Interim Trail would be required to adhere to federal, state, and local regulations related to hazardous material use, storage, disposal and transport. Therefore, under either scenario, the impacts related to hazardous materials would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. While ground disturbance would cover an additional 0.15 acre, requiring more material movement, there is no evidence of hazardous materials within

that area. Therefore, for this trail connection alone, the risk of hazardous material release would be **less than significant**. No mitigation is required.

Threshold C:	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
Threshold 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, create a significant hazard to the public or the environment.

Impact HAZ-2 GROUND DISTURBANCE DURING CONSTRUCTION COULD RELEASE SOIL CONTAMINANTS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

As described in the Project Corridor Setting above, the Project corridor includes potentially contaminated soils from the railroad, and it is located near two sites included on a list of hazardous materials sites compiled pursuant to California Government Code, Section 65962.5. These sites, Boardwalk Entry 2 and Ledyard (reference **Table 3.7-2**), have potential to result in hazard contamination during ground-disturbing activities for Project construction. Although the two documented leak site cases are closed, there is the potential for residual contaminants to be present in shallow soils and groundwater beneath the Project corridor. Grading and excavation during Project construction could expose persons (including construction workers, students, and teachers at Shoreline Middle School located 0.1 mile to the south, and people who may be using or near the rail corridor)to existing contaminants from releases at listed sites, hazardous materials from historical rail operations, contaminated dust particles associated with potential hazardous materials releases, and arsenic from prior herbicide applications along the rail corridor. As described in Section 3.11.1, *Existing Conditions*, in Section 3.11, *Public Safety and Services*, Shoreline Middle School is located 0.1 mile south of the Project corridor on 17th Avenue.

LISTED HAZARDOUS MATERIALS SITES

The Project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to California Government Code, Section 65962.5. However, two hazardous materials sites are located within 140 feet of the Project corridor and may expose construction workers and Shoreline Middle School attendees to residual petroleum hydrocarbon contamination in shallow soils and groundwater during ground-disturbing activities. None of the other listed hazardous materials sites listed in **Table 3.7-2** would pose a potential threat to human health or the environment due to closure status, past remediation, and/or distance from the Project corridor.

The two hazardous materials sites with potential to affect the Project are located along Beach Street. The first site is located between Cliff Street and Riverside Avenue (400 Beach Street) 50 feet south of Segment 8 in the Project corridor. The second site is located where the Project corridor abuts 17th Avenue (1005 17th Avenue), approximately 140 feet from Segment 9 of the Project corridor and less than 600 feet north of Shoreline Middle School. Both sites are listed as closed cases, but there is limited risk of contamination during ground-disturbing activities to expose persons to residual petroleum hydrocarbons in the soil. Additionally, construction personnel and/or

Shoreline Middle School attendees may be exposed to petroleum hydrocarbons in groundwater. Groundwater depths along the Project corridor range from 3 to 25 feet below ground. Therefore, any dewatering activities and excavation during construction has the potential to expose persons to hydrocarbons in groundwater.

This impact would be potentially significant. Implementation of Mitigation Measures HAZ-2a and HAZ-2b would reduce the exposure of construction workers and the public to health hazards associated with soils contaminated with residual petroleum hydrocarbons released during ground-disturbing activities, by requiring soil sampling, potential remediation, and soil management. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures HAZ-2a and HAZ-2b).

HISTORICAL USE

As described in the Project Corridor Setting above, because the Project corridor's historical use was a railroad, there is the potential for soil within the Project corridor to be contaminated with arsenic, heavy metals, pesticides, herbicides, PAHs, TPHs, and other contaminants associated with rail operations. Construction workers could thus be exposed to potential hazards during construction soil disturbing activities. As discussed in Section 3.7.1 under *Residual Chemicals*, the Phase II ESA soil borings throughout the Project corridor detected the presence of elevated levels of arsenic, including in a soil boring within 500 feet of Shoreline Middle School. Therefore, there is potential for construction personnel and the attendees of Shoreline Middle School to be exposed to arsenic. However, implementation of Mitigation Measures HAZ-2a and HAZ-2b above would address the potential impacts from elevated levels of arsenic through soil sampling, necessary remediation, and management. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measures HAZ-2a and HAZ-2b).

CONTAMINATED DUST PARTICLES

Ground-disturbing activities during construction could result in existing contaminants from the former releases at the two previously discussed documented fuel leak sites, historical rail operations, prior herbicide application, and subsequent arsenic contamination along the Project corridor being spread via dust particulates created during ground-disturbing construction activities or direct worker contact and exposure. Members of the public in the vicinity of the Project corridor, including attendees of Shoreline Middle School and residents of single-family residences immediately south of Murray Street or north of the Project corridor between East Cliff Drive and Seabright Avenue, could also be exposed to contaminated dust particulates. In addition, improper handling and disposal of potentially contaminated soils would result in a health risk to construction personnel. Mitigation Measures HAZ-2a and HAZ-2b would be required to minimize the risk of exposing nearby persons to contaminated dust particles. The impact would be **less than significant with mitigation** (Mitigation Measures HAZ-2a and HAZ-2b).

Operation

Once constructed, the Project corridor would be used for active transportation and recreation (e.g., bicyclists, pedestrians), and thus would not operate in a way that would involve storing, transporting, or using hazardous materials. Additionally, the impervious paved trail would act as a cap that prevents trail users from direct exposure to any underlying arsenic-impacted or residual petroleum hydrocarbon contaminated soils. Trail users would not disturb contaminated soils and there would be

no operational impact to Shoreline Middle School. Therefore, the risk of accidental release of hazardous materials during operation would be **less than significant**. No mitigation is required.

In summary, Impact HAZ-2 would be **less than significant with mitigation** (Mitigation Measures HAZ-2a and HAZ-2b).

Mitigation Measure HAZ-2a: Conduct Soil Sampling and Implement Necessary Remediations[2]

Prior to Project construction, the City and County shall coordinate to prepare and submit Work Plan(s) for a Supplemental Soils Investigation to Santa Cruz County Environmental Health. Following notification that Santa Cruz County Environmental Health has received, reviewed, and accepted these Work Plan(s), the City shall conduct a Supplemental Soils Investigation, which shall include soil sampling at selected locations within the limits of the Project corridor under the supervision of a professional geologist or professional civil engineer to identify the concentrations of anticipated contaminants, which may include: pesticides, herbicides, TPHs, heavy metals, PAHs, and other reasonably anticipated contaminants of concern, such as arsenic.

The City and County shall coordinate with Santa Cruz County Environmental Health to develop and implement a program to remediate or manage known contaminated soil during construction. If necessary, any additional information gathered from the Supplemental Soil Investigation shall be used to identify locations along the Project corridor that may require remedial action in order to prevent exposure of construction workers, Shoreline Middle School attendees, and the public to these contaminants. The environmental data collected shall also be used to identify the appropriate disposal options for those soils or demolished materials that require off-site disposal.

Disposal shall occur at an appropriate facility licensed to handle such contaminants, and remedial excavation shall proceed under the supervision of an environmental consultant licensed to oversee such remediation. Where possible, potentially contaminated soils and rail ballast shall be stockpiled and characterized to determine the appropriate means and location for proper storage and disposal. The remediation/disposal program shall be approved by Santa Cruz County Environmental Health. The City and County shall submit any required correspondence to Santa Cruz County Environmental Health prior to issuance of grading permits. All proper waste handling and disposal procedures shall be followed in accordance with applicable DTSC and CalOSHA regulations. Upon completion of the Supplemental Site Investigation, the environmental consultant shall prepare a report presenting the findings of the additional assessment. The report shall be submitted to Santa Cruz County Environmental Health and include figures depicting the boring locations, summary tables of analytical data, conclusions, and recommendations.

Mitigation Measure HAZ-2b: Prepare and Implement Soils Management Plan[3]

The City and County shall ensure a Soils Management Plan (SMP) is developed by a qualified engineer. The SMP shall be implemented to protect workers and persons at Shoreline Middle School during ground-disturbing activities and to remove and/or mitigate exposure to hazardous-material-containing soil and ballast, where present in the Project corridor. Laboratory data for the impacted

[2] This is Mitigation Measure HAZ-1(a) (Soil Sampling and Remediation) from the Master Plan EIR (RTC 2013), refined to account for project-specific conditions. The Phase I ISA prepared for the Project corridor recommended conducting a limited shallow soil screening across the length of the Segments 8 and 9, to identify the naturally occurring background concentration for arsenic and potentially other contaminants, to assist with special handling required during construction activities (WHA 2022).

[3] This is a modified version of Mitigation Measure HAZ-1(b) (Arsenic Management Plan) from the Master Plan EIR (RTC 2013) that includes arsenic-containing soils management as well as other potential contaminants. The Phase I ISA prepared for the Project corridor further recommended completing a soil management plan to identify soil excavation, stockpiling, and disposal procedures, and construction monitoring guidelines.

soil, identified as part of the soils and ballast assessment report prepared under Mitigation Measure HAZ-2a, shall be used to profile excavated soil prior to transport, treatment, and recycling at a licensed treatment facility. Additional profiling of the export soils shall be performed as needed to satisfy requirements of the receiving facility. Removal, transportation, and disposal of impacted soil shall be performed in accordance with applicable DTSC and CalOSHA laws, regulations, and ordinances. The SMP shall include health and safety information for workers and the general public with an emphasis on potential adverse health effects and how to seek proper help if an accident is suspected and inform the various contractors and workers of the presence of shallow soil impacted with contaminants and the appropriate measures to avoid exposure to contaminants. These measures may include but would not be limited to the following:

1. Installing temporary security fencing around the construction site and flag/cone off the areas of contaminated soils (hotspots) until the contaminants are removed
2. Providing all personnel entering a hotspot with site-specific awareness training
3. Requiring that all personnel whose work will involve the excavation or disturbance of soils in and around the hotspot must have successfully completed 40-hour Hazardous Worker (HAZWOPER) training
4. Requiring a HAZWOPER supervisor to be on-site at all times during the excavation or disturbance of soils in a hotspot
5. Prohibiting personnel who cannot prove that they are authorized to enter a hotspot or do not have the appropriate personal protective equipment from entering a hotspot
6. Prohibiting eating, drinking, smoking, chewing gum or tobacco in hotspots, and requiring consumable items and activities be confined to designated worker break areas

In the event that contaminated soil and/or groundwater are identified where not previously anticipated during construction, the SMP shall also require that construction cease and that appropriate handling and disposal procedures be implemented. Contaminated soils and/or groundwater can be identified by discoloration or stains, distinctive odors, absence of plants and animals, subsequent erosion from the absence of plant life, or the presence of paint chips or other materials known to contaminate soils. Procedures for properly handling, storing, and disposing contaminated soils may include but are not limited to the following:

1. Placing contaminated soils in properly labeled drums or lined hazardous waste storage/transportation conveyance units (i.e., roll-off waste boxes) in preparation of transportation and disposal
2. Avoiding temporary stockpiling of contaminated soils or hazardous materials
3. If temporary stockpiling is necessary:
    a. Covering the stockpile with plastic sheeting or tarps
    b. Installing a berm around the stockpile to prevent runoff from leaving the area
    c. Avoiding stockpiling in or near storm drains or watercourses
4. Monitoring the air quality during excavation operations at locations potentially exhibiting elevated concentrations of hazardous material
5. Collecting water from decontamination procedures and treating and/or disposing of it at an appropriate disposal site
6. Collecting non-reusable protective equipment and disposing of the equipment at an appropriate disposal site

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Impacts from implementation of the Interim Trail (Part 1) of *Optional First Phase: Trail on the Rail Line (Interim Trail)* would be greater than those identified for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. While construction would not involve ground disturbance outside the rail bed, resulting in in slightly fewer impacts related to the nearby former release sites, there is still substantial potential for exposure to contaminants from removal of the rail line. Removal of the rail and construction of the Interim Trail could result in health hazard to construction workers and attendees at Shoreline Middle School from exposure to contaminants that could be present on the track ballast and the rail ties.

The Interim Trail would also involve the removal of existing structures and equipment associated with rail crossings including crossing gates, switch boxes, and other small supporting enclosures or appurtenances, which would have been originally constructed between 1903 and 1977 (RTC 2012). Based on the age of these structures, demolition could involve the disturbance of LBP or ACMs.

If present in the existing structures, ACMs would require abatement prior to renovation. If not properly abated in advance of renovation, workers and surrounding receptors may be exposed to friable asbestos. Existing regulations, including the MBARD Rule 424 (National Emission Standards for Hazardous Air Pollutants) require that the owner or operator of any demolition or renovation activity perform an asbestos survey prior to demolition. MBARD requires that the ACM survey be conducted by a licensed asbestos sampling company. Under these regulations, all testing procedures would be required to follow federal and state protocols. Pursuant to federal and state standards, an asbestos survey report would be required to quantify the areas of ACMs. If the existing structures are found to contain ACMs, Rule 424 requires that abatement activities comply with federal and state OSHA and MBARD requirements. All ACMs removed under the Interim Trail would be required to be hauled to a licensed receiving facility and disposed under proper manifest, if needed, by a transportation company certified to handle ACMs. In addition, all construction activities associated with the Interim Trail would be required to comply with federal and state OSHA requirements relating to LBP abatement. Under these requirements, only LBP-trained and certified abatement personnel would be allowed to perform abatement activities. All LBP removed from existing structures and equipment would be hauled by a transportation company licensed to transport this type of material to a landfill or receiving facility licensed to accept the waste. Still, until further soil analysis is completed to determine extent of ACMs and LBPs and an adequate cap is built over the rail bed, impacts could be potentially significant. This impact would be reduced to a less than significant level with compliance with existing regulations and implementation of Mitigation Measure HAZ-2c, which requires evaluation of subgrade soils and capping contaminated soils and ballast with asphalt.

As specified in Section 2.6, *Project Construction*, to reduce the quantity of materials hauled off-site, the existing ballast material, which forms the raised track bed, would be leveled and used as a foundation below the base material and asphalt. As discussed in Section 3.7.1, the creosote-soaked rail ties and contaminated rail ballast is likely to contain concentrations of PAHs, TPHs, heavy metals, arsenic, pesticides, and/or herbicides beyond acceptable screening levels. Because the optional Interim Trail would involve physically disturbing and/or removing these components of the rail line (rail ties and ballast), there is potential for aerially releasing contaminants, directly or indirectly exposing construction personnel, the public, or Shoreline Middle School attendees. In addition, there is potential for contaminated materials, such as the ballast, to expose future trail

users to concentrations of hazardous material. Therefore, impacts would be potentially significant. This impact would be reduced to a less than significant level with implementation of Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-2c. Pursuant to Mitigation Measure HAZ-2c, the ballast would be tested for hazardous materials, and contaminated ballast reused for base rock would be capped to avoid the exposure of future trail users to arsenics. Alternatively, the ballast and contaminated subsoil would be hauled off-site for disposal in accordance with DTSC standards. There would be no on-site storage of contaminated ballast, other than that capped in asphalt, and no ties or other unregulated hazardous materials would be stored on-site.

Institutional Controls are used to stop or reduce the exposure of human and environmental receptors where future land and water uses may not be compatible with residual contamination or where cleanup involves leaving contaminated soils in place. CCR Title 22, Section 67391.1, requires the property owner of sites requiring Institutional Controls to enter into a Land Use Covenant to ensure that DTSC (or the agency to which its authority has been delegated) will have authority to implement, monitor, and enforce protective restrictions. In compliance with CCR Title 22, Section 67391.1, the owner would execute and record the Land Use Covenant with Santa Cruz County Environmental Health if hazardous materials, hazardous wastes or constituents, or hazardous substances remain at the property at levels which are not suitable for unrestricted use of the land. In addition, Santa Cruz County Environmental Health would clearly set forth and define land use limitations or covenants in a cleanup decision document prior to approving or concurring in any facility closure, corrective action, remedial or removal action, or other response actions. Compliance with CCR Title 22, Section 67391.1, would reduce impacts of hazardous material release through additional oversight by the DTSC and Santa Cruz County Environmental Health.

Therefore, Impact HAZ-2 would be **less than significant with mitigation** (Mitigation Measures HAZ-2a, HAZ-2b, and HAZ-2c).

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would remove the trail on the rail bed and re-install the rail tracks/ties on the rail bed. The potential impacts would be similar to but slightly greater than for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* as the trail would be removed. Demolition of the Interim Trail and ground disturbance during construction of the rail line could release contaminants that would expose construction personnel, the public, and students at Shoreline Middle School. With implementation of Mitigation Measures HAZ-2a through HAZ-2c, impacts would be **less than significant with mitigation**.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of the optional Interim Trail would result in potential impacts similar to those described above for Impact HAZ-2 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The impact would be **less than significant with mitigation** (Mitigation Measures HAZ-2a and HAZ-2b).

Mitigation Measure HAZ-2c: Evaluate Subgrade Soil and Cap Contaminated Soils and Ballast (Optional Interim Trail Parts 1 and 2 Only)

Prior to the finalization of pavement design for the optional Interim Trail and prior to removal of the rail and construction of the Interim Trail (Part 1), and prior to demolition of the Interim Trail and rebuilding of the rail line (Part 2), the structural quality of the subgrade soil shall be evaluated to ensure that it has adequate strength to carry the predicted loads during the design life of the

pavement, and to avoid exposure of trail users to hazardous soil or ballast. The Interim Trail pavement shall also be engineered to limit the expansion and loss of density of the subgrade soil. The existing ballast material shall serve as the base rock layer to support the base material and asphalt layer of the cover. The ballast material shall be leveled to establish a base rock layer at a depth to be determined following evaluation of hazardous soil and ballast.

Residual soil disturbed by construction (on which the trail would be placed) would be capped (e.g., covered with asphalt) to avoid exposure of trail users to hazardous soil or ballast. In order to ensure that the asphalt cap is maintained as designed, a regulatory oversight agreement between the owner or their designee and Santa Cruz County Environmental Health shall be required. This Post Construction Site Management Plan shall include procedures and requirements for ongoing maintenance of the asphalt cap to ensure the cap is maintained in good condition so that it remains protective of public health and the environment. The ACO Agreement shall include the following elements:

- **Inspections.** The cap shall be regularly inspected to ensure that it is functioning as intended. These inspections shall be conducted on a routine basis as well as after unplanned events (e.g., earthquake, on-site construction activity) that may have affected the integrity of the asphalt cap.
- **Repairs and Maintenance.** The cap shall be maintained in a manner that ensures it is functioning as intended. Examples of cap maintenance include vegetation control, and repairs due to cover erosion, asphalt cracking, settlement, and subsidence. For asphalt and concrete caps, periodic sealing of the cap surface will be necessary. Repairs and maintenance of the cap shall be performed according to the procedures and timeframes specified in the ACO Agreement.
- **Reporting, Recordkeeping, and Notification.** The ACO Agreement shall outline the recordkeeping requirements, provide for submittal of periodic inspection summary reports, identify the site activities or conditions that require notification of the regulatory agencies, and identify the time frame and mechanism (e.g., verbal, written) for the required notifications.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of optional Interim Trail (Parts 1, 2, 3) would be an overall increase in potential impacts related to the release of hazardous materials. However, implementation of Mitigation Measures HAZ-2a through HAZ-2c would reduce the impact to a less than significant level. No operational impacts would exist in respect to hazardous materials, as discussed above. Therefore, the combined effects of the Interim Trail on hazardous materials would be **less than significant with mitigation** (Mitigation Measures HAZ-2a, HAZ-2b, HAZ-2c).

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project with the optional Interim Trail would have substantially greater potential impacts with respect to release of hazardous materials than the Proposed Project without the Interim Trail. Removal of the existing rail line and Interim Trail (Interim Trail Parts 1 and 2) would have the potential to release and contaminants including LBPs, ACMs, PAHs, TPHs, heavy metals, arsenic, pesticides, and/or herbicides that would be disturbed construction. Additionally, ground-disturbing construction would occur three times for the Interim Trail, instead of once, which would increase the potential for exposure to contaminants. The Interim Trail would require two additional mitigation measures, Mitigation Measures HAZ-2b and HAZ-2c, to reduce impacts. The impacts would be **less than significant with mitigation**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. While ground disturbance would cover an additional 0.15 acre, there is no evidence of hazardous materials within that area. Given the area's proximity to the existing rail line, risk of hazardous material release (Impact HAZ-2) would be similar to that described above for the Ultimate Trail Configuration. The impacts would remain **less than significant with mitigation** (Mitigation Measure HAZ-2a and HAZ-2b) to sample, remediate, and manage contaminated soils.

3.7.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
HAZ-1. Construction of the Project would involve use, disposal, or transportation of hazardous materials, which could be accidentally released.	LTS	LTS Marginally greater impact	LTS Marginally greater impact	LTS Substantially similar
HAZ-2. Ground disturbance during construction could release soil contaminants.	**LTSM** MM HAZ-2a HAZ-2b	**LTSM** Marginally greater impact MM HAZ-2a HAZ-2b HAZ-2c	**LTSM** Marginally greater impact MM HAZ-2a HAZ-2b HAZ-2c	**LTSM** Substantially similar MM HAZ-2a HAZ-2b

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.8 Hydrology and Water Quality

This section evaluates potential impacts relating to hydrology and water quality on and around the Project corridor. This analysis includes a review of surface water, runoff patterns, groundwater, flooding, and water quality. Water supply and wastewater conveyance and treatment are discussed in Section 3.15, *Utilities and Service Systems*. Potential impacts to wetlands and waters of the United States are discussed in Section 3.3, *Biological Resources*. **Table 3.8-1** presents a summary of potential impacts related to hydrology and water.

Table 3.8-1 Summary of Project Impacts on Hydrology and Water Quality[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
HYD-1. The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality nor conflict with water quality control plan.	Less than Significant	None Required	Less than Significant
HYD-2. The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.	Less than Significant	None Required	Less than Significant
HYD-3. The Project would not substantially alter drainage patterns in the Project corridor or vicinity.	Less than Significant	None Required	Less than Significant
HYD-4. The Project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	Less than Significant	None Required	Less than Significant

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.8.1 Existing Conditions

Regional Setting

Watersheds

The U.S. Geological Survey Watershed Boundary Dataset identifies watersheds within the Project vicinity and delineates watersheds according to hydrologic units (HUs), identified by name and by hydrologic unit code. On a statewide scale, HUs consist of large regions and subregions draining to a common outlet. At this scale, the Project corridor is within the 674-square-mile San Francisco Coastal South Subbasin (Hydrologic Unit Code 18050006), which includes all watersheds on the coastal side of the San Francisco peninsula.

The California Department of Water Resources divides surface watersheds in California into 10 hydrologic regions (HR). The Project corridor is located in the Central Coast HR. This region covers approximately 7.25 million acres and includes all of Santa Cruz, Monterey, San Luis Obispo, and Santa Barbara Counties, as well as parts of San Benito, San Mateo, Santa Clara, and Ventura Counties. Major geographic features that define the region include the Pajaro, Salinas, Carmel, Santa Maria, Santa Ynez, and Cuyama Valleys; the coastal plain of Santa Barbara; and the California Coast Ranges. The region is largely defined by the northwest-trending southern California Coast Ranges, with a climate

generally classified as Mediterranean. The region depends heavily on groundwater, which makes up the vast majority of available water supply, but recycled water is becoming a more plentiful supplemental source for agricultural and other non-potable uses (DWR 2009).

The California Department of Water Resources subdivides HRs into HUs that are commonly known as watersheds. In the Central Coast HR, the Project corridor is located in the Big Basin HU. The Central Coast Regional Water Quality Control Board (CCRWQCB) governs basin planning and water quality in the Big Basin HU (CCRWQCB 2019). The California Department of Water Resources further subdivides HUs into hydrologic areas (HA) and hydrologic sub-areas. The Project corridor is located in the Santa Cruz HA and the San Lorenzo hydrologic sub-area.

The San Lorenzo watershed is a 138-square-mile area located along the Central Coast of California and drains from the Castle Rock area of Summit to the north, Ben Lomond Mountain to the west, and the Branciforte area on the eastside down to the Pacific Ocean at the north end of Monterey Bay by the Santa Cruz Beach Boardwalk. Notable tributaries of the San Lorenzo River (SLR) include Kings, Boulder, Bear, Bean, Fall, Newell, Zayante, and Branciforte Creeks. The Project corridor is adjacent to the SLR mouth (**Figure 2-1**).

The Project corridor also is located in the Arana Gulch-Rodeo subwatershed, which drains a 3.5-square-mile area at the outer (eastern) edges of the City of Santa Cruz (City). Major waterways and water bodies in this watershed include the SLR, Arana Gulch (which leads to Woods Lagoon and the Santa Cruz Harbor), Leona Creek (which leads to Schwann Lake), Rodeo Creek Gulch, and several unnamed waterways. The Project corridor crosses the SLR, Pilkington Creek, Woods Lagoon (Santa Cruz Harbor), and Leona Creek.

Topography and Climate

In the Project area, average annual temperatures in degrees Fahrenheit are relatively stable and range from winter lows in the upper 30s to summer highs in the middle 70s (WRCC 2022). The total average annual precipitation is approximately 29.33 inches, with the majority of rainfall occurring from November through March.

Refer to Section 3.2, *Air Quality*, for additional information about weather and wind patterns.

Project Corridor Setting

Surface Water

This section describes the surface water features along the Project corridor and the existing beneficial uses[1] and water quality for those waters.

STREAMS AND DRAINAGE PATTERNS

The SLR extends between Segments 8 and 9 of the Project corridor (**Figure 2-1**). The portion of Segment 8 that crosses over the SLR on the SLR Trestle Bridge is already constructed and therefore not part of the Project.

[1] Beneficial uses are defined in the Basin Plan as existing or potential uses of water in the Central Coastal Basin that must be protected. The Basin Plan then establishes water quality standards and the level of treatment necessary to maintain the standards and ensure the continuance of the beneficial uses (CCRWQCB 2019).

Segment 9 of the Project crosses several waterways, including (from west to east) Pilkington Creek, Woods Lagoon (Santa Cruz Harbor), Leona Creek, and Stream 1545 (**Figure 3.8-1**). Leona Creek and Stream 1545 feed into Schwan Lake (also called Schwan Lagoon). In general, the area surrounding the Project corridor drains into the City and Santa Cruz County (County) storm drain systems and ultimately to the Pacific Ocean (Monterey Bay). The western end of Segment 9 flows to the SLR and into the bay. All of these stream courses and waterbodies have been manipulated to some extent, and flow is conveyed via constrained channels and via tunnels and culverts under roadways and the rail corridor.

SURFACE WATER QUALITY

The San Lorenzo Hydrologic Sub-Area includes the Cities and communities of Santa Cruz, Scotts Valley, Felton, Ben Lomond, and Boulder Creek. Much of the watershed is forested except for these pockets of urban areas. The SLR is listed on the 2002 Clean Water Act (CWA) Section 303(d) List of Water Quality Limited Segments for sediment, pathogens, and nutrients. A sediment Total Maximum Daily Load (TMDL) for the SLR (and associated tributaries Carbonera Creek, Lompico Creek, and Shingle Mill Creek) has been adopted by the Regional Water Quality Control Board (RWQCB).

The Arana Gulch-Rodeo watershed covers a 3.5-square-mile area at the eastern edge of the City and unincorporated County. The Arana Gulch-Rodeo watershed originates in the Santa Cruz Mountains and flows into Woods Lagoon (Santa Cruz Harbor), Schwan Lagoon, Corcoran Lagoon, and ultimately Monterey Bay.

The CCRWQCB regulates water quality in the Big Basin HA and establishes water quality objectives and requirements for the quality of point and nonpoint sources of discharge through the Central Coast Water Quality Control Plan (Basin Plan). A point source of discharge is defined as waste emanating from a single, identifiable point, such as a wastewater treatment plant. A nonpoint source of discharge results from drainage and percolation of agricultural and urban stormwater runoff.

The Basin Plan defines beneficial uses of several streams and estuaries within or adjacent to the Project corridor. The beneficial uses for those waterbodies are listed below in **Table 3.8-2**. Based on the established beneficial uses listed below, the CCRWQCB established water quality standards and the level of treatment necessary to maintain the standards and ensure the continuance of the beneficial uses.

The Basin Plan also defines beneficial uses for coastal waters in the region. Santa Cruz Harbor is recognized as providing the beneficial uses of Water Contact Recreation, Non-Contact Water Recreation, Industrial Service Supply, Navigation, Marine Habitat, and Commercial and Sport Fishing. San Lorenzo Estuary is recognized as providing the beneficial uses of Water Contact Recreation, Non-Contact Water Recreation, Navigation, Marine Habitat, Shellfish Harvesting, Commercial and Sport Fishing, and Wildlife Habitat.

Table 3.8-2 Beneficial Uses of Waterbodies in the Project Corridor

	Waterbody Name			
Beneficial Uses	**San Lorenzo River**	**Arana Gulch**	**Woods Lagoon**	**Schwann Lake**
Municipal and Domestic Supply	X	X		
Agricultural Supply	X			
Industrial Process Supply				
Industrial Service Supply	X			
Groundwater Recharge	X	X		
Water Contact Recreation	X	X	X	X
Non-Contact Water Recreation	X	X	X	X
Wildlife Habitat	X	X	X	X
Cold Fresh Water Habitat	X	X		
Warm Fresh Water Habitat				X
Migration of Aquatic Organisms	X	X	X	
Spawning, Reproduction, and/or Early Development	X	X	X	X
Preservation of Biological Habitats of Special Significance	X			X
Rare, Threatened, or Endangered Species	X			X
Estuarine Habitat		X	X	
Fresh Water Replenishment	X			
Commercial and Sport Fishing	X	X	X	X
Shellfish Harvesting			X	

Source: CCRWQCB 2019.

Groundwater

This section describes the groundwater basins, or aquifers, that underlie the Project corridor. The storage capacity, current estimated amount of groundwater in storage, and quality of the groundwater are reported based on available data.

GROUNDWATER STORAGE CAPACITY AND LEVELS

Two coastal aquifers underlie the Project corridor. The West Santa Cruz Terrace Groundwater Basin underlies approximately 1 mile of the western portion of the Project corridor. The Santa Cruz Mid-County Groundwater Basin underlies approximately 1.2 miles of the eastern portion of the Project corridor. Both groundwater basins are narrow, measuring approximately 0.3 to 0.4 mile in width, and lie beneath the marine terraces that support the Project corridor. **Figure 3.8-2** shows these two coastal basins in relation to the Project corridor.

The West Santa Cruz Terrace Groundwater Basin is bounded to the south by Monterey Bay and to the north by a series of hills that define the contact of Quaternary and Pliocene deposits (Purisima Formation). The eastern boundary coincides with the western boundary of the Soquel Creek Water District, and the Soquel Valley Groundwater Basin. The western and northwestern boundaries include pre-Cretaceous metasedimentary rocks (Jennings 1958). The basin extends northward upstream along the SLR. West Santa Cruz Terrace is a basin with approximately 126 wells, approximately 11 of which are water supply wells (Groundwater Exchange 2022). The West Santa Cruz Terrace Groundwater Basin is not in a critical overdraft.

The lateral boundaries of the Santa Cruz Mid-County Groundwater Basin generally follow the definable limits of the stacked Purisima Formation aquifer system and the Aromas Red Sands, plus some other Tertiary-aged units that occur between the base of the Purisima Formation and the granitic basement of the Basin. The western boundary of the basin follows the watershed boundary between Carbonera Creek and Branciforte Creek where the Purisima Formation is eroded to the granitic basement and is considered a barrier to groundwater flow. The watershed boundary extends north from the Pacific Ocean separating the Mid-County Groundwater Basin from the West Santa Cruz Terrace Basin to the west. The Santa Cruz Mid-County Groundwater Basin is a high priority groundwater basin in critical overdraft and threatened by seawater intrusion (MCGA 2019).

GROUNDWATER QUALITY

Groundwater produced in the Santa Cruz Mid-County Groundwater Basin is generally of good quality and does not regularly exceed primary drinking water standards. A few naturally occurring constituents, including iron and manganese exceed drinking water standards in parts of the Santa Cruz Mid-County Groundwater Basin. As previously mentioned, some coastal monitoring wells have elevated chloride and total dissolved solids concentrations associated with seawater intrusion (MCGA 2019). There is no water quality information for the West Santa Cruz Terrace Groundwater Basin.

Hazards

FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD HAZARD ZONES

The Federal Emergency Management Agency (FEMA) establishes base flood heights for the 100-year flood zone and the 500-year flood zone. The 100-year flood zone is defined as the area that could be inundated by a flood that has a 1% probability of occurring in any given year, or once every 100 years. The 500-year flood zone is defined as the area that could be inundated by a flood that has a

0.2% probability of occurring in any given year, or once in 500 years. The Project corridor crosses the Santa Cruz Harbor Zone AE, an area subject to inundation 100-year flood event. In addition, the far western portion of the Project crosses a FEMA Zone A99 along Beach Street, between Pacific Avenue and SLR Trestle Bridge (Balance Hydrologics 2022). A Zone A99 is an area protected from the 1% chance flood (100-year) event by a federal flood protection system under construction.

MUDFLOW, SEICHE, TSUNAMI

The Project corridor is generally flat and not surrounded by steep slopes, and the Project is therefore not subject to inundation by mudflow.

A seiche is a standing wave oscillating in a body of water and may occur in any enclosed or semi-enclosed bodies of water, such as bays and lakes. Seiches are typically caused by strong wind and rapid changes in atmospheric pressure. They can also form along ocean shelves and harbors due to earthquakes, tsunamis, or severe storm fronts. Along Segment 9, the trail passes adjacent to Schwann Lagoon, which is an enclosed body of water.

A tsunami is a series of waves generated by an impulsive disturbance in the ocean or in a small, connected body of water. Tsunamis are produced when movement occurs on faults in the ocean floor, usually during very large earthquakes. Sudden vertical movement of the ocean floor when fault movement occurs can displace the overlying water column, creating a wave that travels outward from the earthquake source. An earthquake anywhere in the Pacific can cause tsunamis around the entire Pacific basin. Since the Pacific Rim is highly seismically active, tsunamis are not uncommon (City of Santa Cruz 2017). For example, in January 2022, a tsunami caused by an underwater volcano near Tonga caused damage to utility infrastructure, pilings, and facilities such as restrooms and showers in the Santa Cruz Harbor, and in 2011, a tsunami caused by an 8.9 magnitude earthquake off the coast of Japan caused extensive damage to the coastline and Santa Cruz Harbor. **Figure 3.8-3** shows the extent of the tsunami inundation area in the Project corridor and indicates that 0.8 mile of the Project corridor is mapped in a tsunami inundation area.

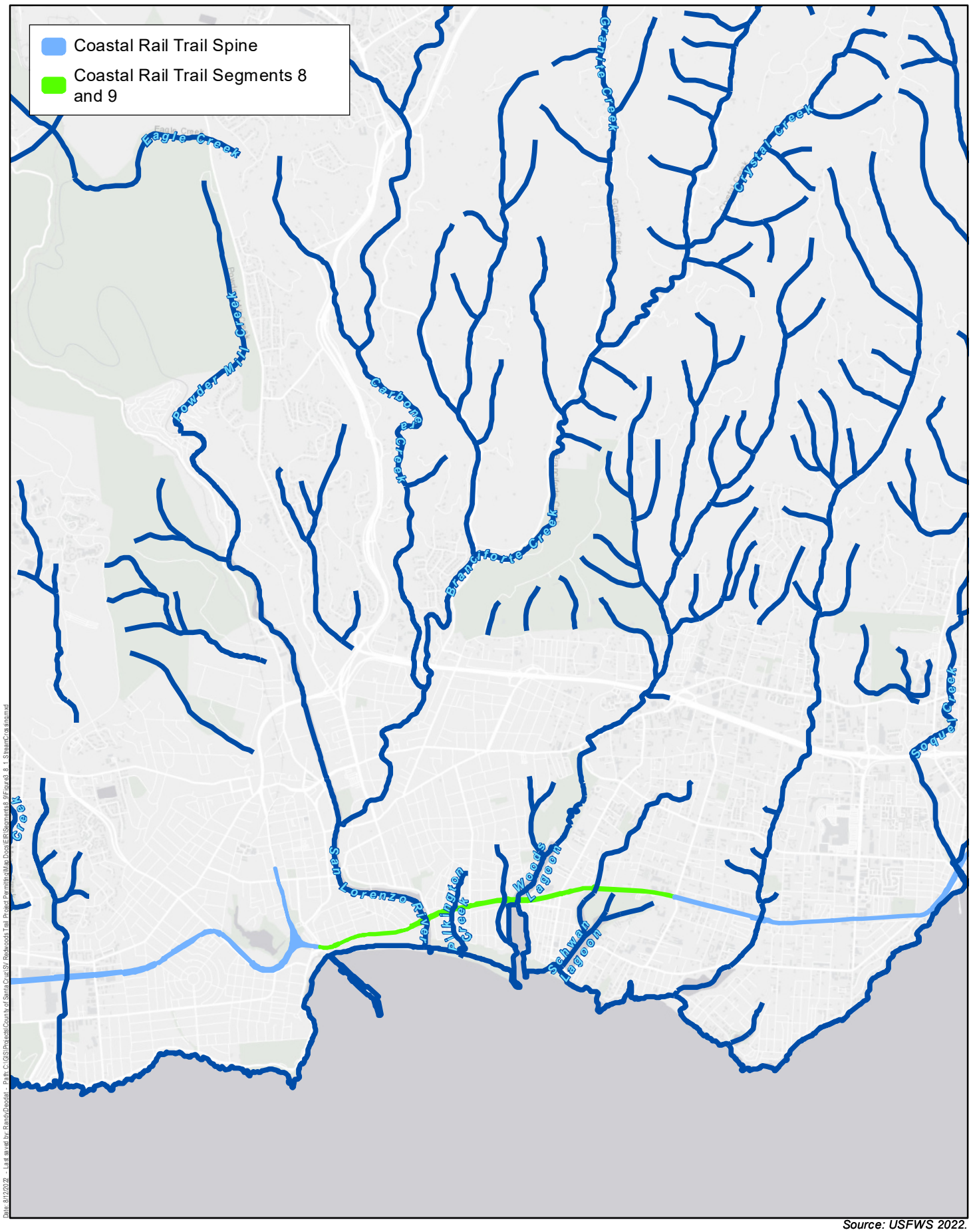
3.8.2 Regulatory Setting

This section describes the federal, state, regional, and local plans, policies, and laws relevant to hydrology and water quality for the Project.

Federal

Federal Clean Water Act

In 1972, Congress passed the Federal Water Pollution Control Act, commonly known as the CWA, with the goal of "restor[ing] and maintain[ing] the chemical, physical, and biological integrity of the Nation's waters" (33 U.S.C. 1251[a]). The CWA directs states to establish water quality standards for all waters of the United States and to review such standards on a triennial basis and consider updating them. Section 319 mandates specific actions for the control of pollution from nonpoint sources. The U.S. Environmental Protection Agency has delegated responsibility for implementation of portions of the CWA, including water quality control planning and control programs, such as the National Pollutant Discharge Elimination System (NPDES) Program, to the State Water Resources Control Board (SWRCB) and the RWQCBs.



Source: USFWS 2022.

Harris & Associates

N

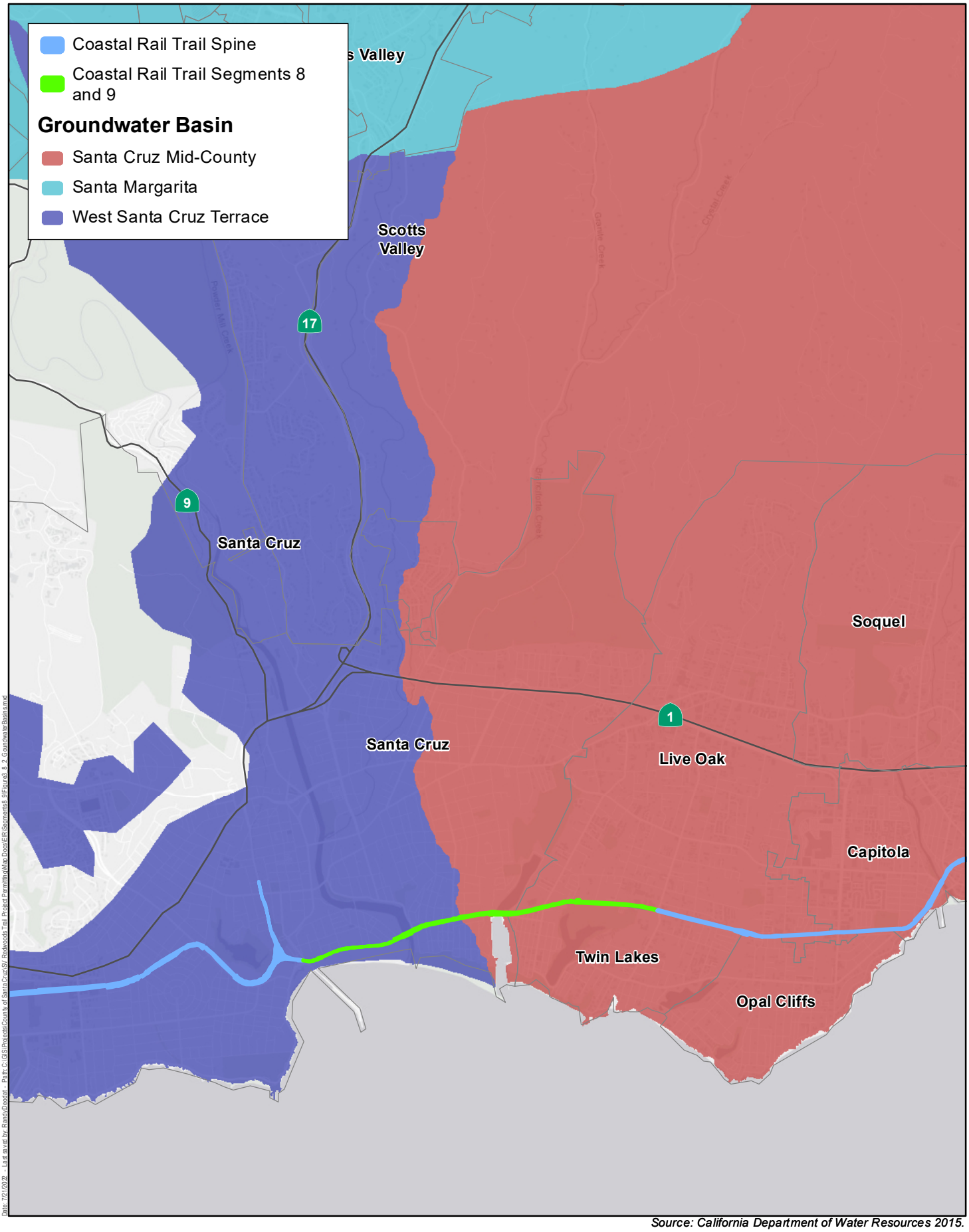
0 0.5 1

Miles

Figure 3.8-1

Project Stream Crossing

Coastal Rail Trail Segments 8 and 9



Source: California Department of Water Resources 2015.

Harris & Associates

N

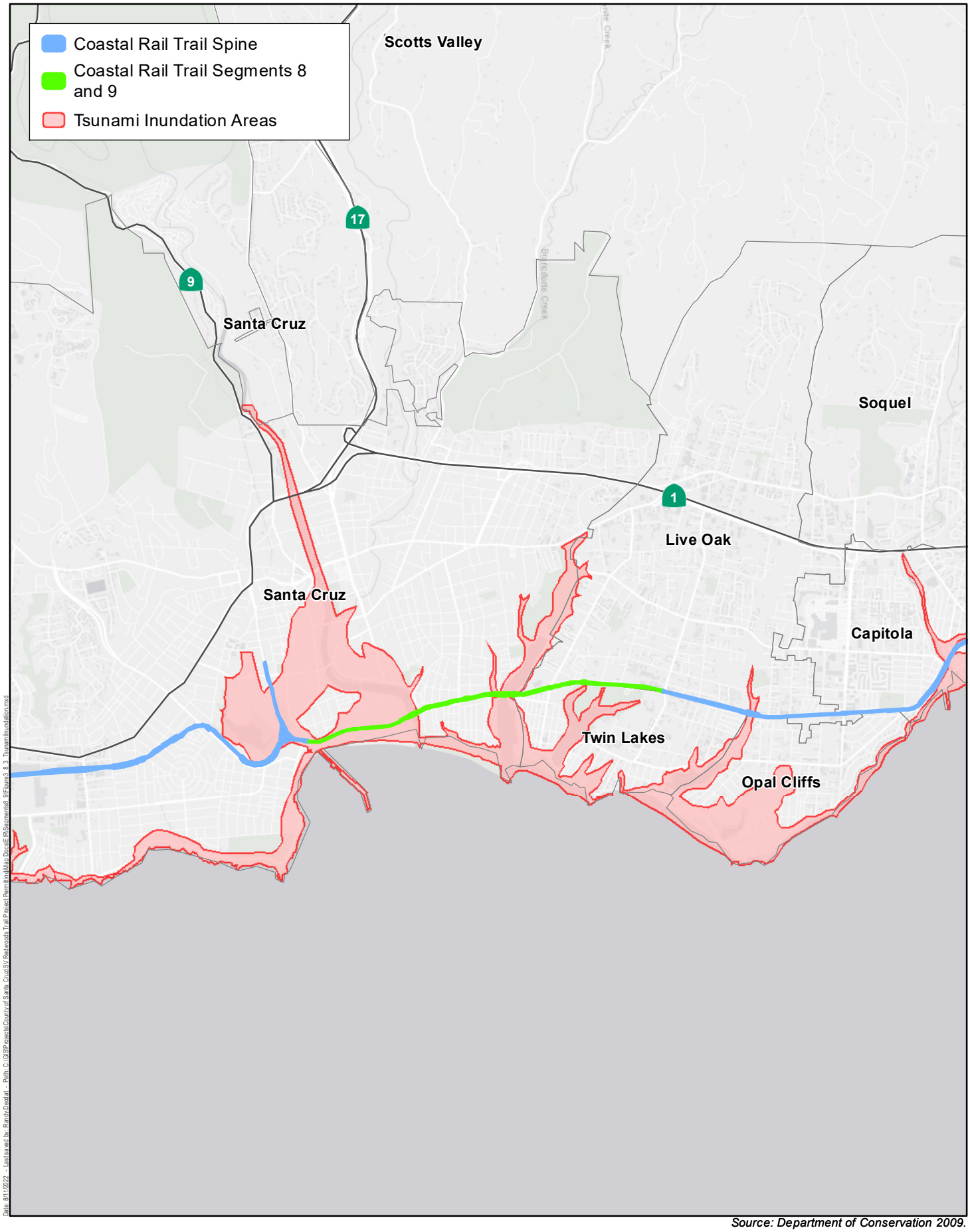
0 0.5 1

Miles

Figure 3.8-2

Groundwater Basins

Coastal Rail Trail Segments 8 and 9



Source: Department of Conservation 2009.

Harris & Associates

N

0 0.5 1

Miles

Figure 3.8-3

Tsunami Inundation Areas

Coastal Rail Trail Segments 8 and 9

Section 303(c)(2)(b) of the CWA requires states to adopt water quality standards for all surface waters of the United States based on the water body's designated beneficial use. Water quality standards are typically numeric, although narrative criteria based on biomonitoring methods may be employed where numerical standards cannot be established or where they are needed to supplement numerical standards. Water quality standards applicable to the Project are provided in the Basin Plan (CCRWQCB 2019).

Section 303(d) of the CWA bridges the technology-based and water quality-based approaches for managing water quality. Section 303(d) requires that states make a list of waters that are not attaining standards after the technology-based limits are put into place. For waters on this list and where the U.S. Environmental Protection Agency administrator deems they are appropriate, states are to develop TMDL. TMDLs are established at the level necessary to implement the applicable water quality standards. A TMDL must account for all sources of the pollutants that caused the water to be listed. A sediment TMDL for the SLR (and associated tributaries Carbonera Creek, Lompico Creek, and Shingle Mill Creek) has been adopted by the RWQCB.

Section 402 of the CWA established the NPDES. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of best management practices (BMPs). The NPDES permit system was established in the CWA to regulate point source discharges (a municipal or industrial discharge at a specific location or pipe) and certain types of diffuse discharges, including urban stormwater and construction site runoff.

The SWRCB permits all regulated construction activities under NPDES General Permit for Stormwater Discharges Associated with Construction Activity (adopted September 2, 2009), known as the "Construction General Permit." Every construction project that disturbs 1 or more acres of land surface or that is part of a common plan of development or sale that disturbs more than 1 acre of land surface would require coverage under this Construction General Permit. To obtain coverage under this Construction General Permit, the landowner or other applicable entity must file Permit Registration Documents prior to the commencement of construction activity and mail the appropriate permit fee to the SWRCB. The Permit Registration Documents include a Notice of Intent, Stormwater Pollution Prevention Plan (SWPPP), and other documents required by the Construction General Permit. Since the Project would disturb more than 1 acre, construction of the Project would be subject to these Construction General Permit requirements.

Construction activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as stockpiling or excavation, that result in soil disturbances of at least 1 acre of total land area. The SWPPP has two major objectives: (1) to help identify the sources of sediment and other pollutants that affect the quality of stormwater discharges, and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater and non-stormwater discharges. BMPs are intended to reduce impacts to the maximum extent practicable.

Section 404 of the CWA prohibits the discharge of any pollutants into waters of the United States except as allowed by permit. Section 404 of the CWA authorizes the U.S. Army Corps of Engineers to issue permits for and to regulate the discharge of dredged or fill materials into wetlands or other waters of the United States. Under the CWA and its implementing regulations, "waters of the United States" are broadly defined to consist of rivers, creeks, streams, and lakes extending to their headwaters, including adjacent wetlands.

Federal Emergency Management Agency

FEMA formed in 1979 as an independent agency and became part of the Department of Homeland Security in March 2003. The agency is tasked with responding to, planning for, recovering from, and mitigating against disasters. FEMA is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers studies and approved agency studies, as well as for coordinating the federal response to floods, earthquakes, hurricanes, and other natural or human-made disasters. FEMA also provides disaster assistance to states, communities, and individuals.

FEMA distributes Flood Insurance Rate Maps that identify the locations of special flood hazard areas, including the 100-year flood zone. Executive Order 11988 (Flood Plain Management) links the need to protect lives and property with the need to restore and preserve natural and beneficial floodplain values. Specifically, federal agencies are directed to avoid conducting, allowing, or supporting actions on the base floodplain unless the agency finds that the base floodplain is the only practicable alternative location. As noted previously, one location along the Project corridor is crossed by a 100-year flood hazard zone.

Similarly, Department of Transportation Order 5650.2 implements Executive Order 11988 and was issued pursuant to the National Environmental Policy Act of 1969, the National Flood Insurance Act of 1968, and the Flood Disaster Protection Act of 1973. The order prescribes policies and procedures for ensuring that proper consideration is given to avoidance and mitigation of adverse floodplain impacts in agency actions, planning programs, and budget requests.

State

Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) establishes the SWRCB and each RWQCB as the principal state agencies for coordinating and controlling water quality in California. Specifically, the Porter-Cologne Act authorizes the SWRCB to adopt, review, and revise policies for all surface waters and groundwater of the state and directs the RWQCBs to develop regional basin plans.

The CCRWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters in its jurisdiction. As described previously, water quality objectives for receiving waters in the County are specified in the Basin Plan prepared by the CCRWQCB, in compliance with the federal CWA and the Porter-Cologne Act. The principal elements of the Basin Plan are a statement of beneficial water uses protected under the plan, water quality objectives necessary to protect the designated beneficial water uses, and strategies and time schedules for achieving the water quality objectives. Together, narrative and numerical objectives define the level of water quality that shall be maintained in the region. The water quality objectives are achieved primarily through the establishment and enforcement of waste discharge requirements (WDRs).

The RWQCBs have primary responsibility for issuing WDRs. The RWQCBs may issue individual WDRs to cover individual discharges or general WDRs to cover a category of discharges. WDRs may include effluent limitations or other requirements designed to implement applicable water quality control plans, including designated beneficial uses and the water quality objectives established to protect those uses and prevent the creation of nuisance conditions. Violations of WDRs may be addressed by issuing Cleanup and Abatement Orders or Cease and Desist Orders, assessing administrative civil liability, or seeking imposition of judicial civil liability or judicial injunctive relief.

California Coastal Act

The California Coastal Commission was established in 1972 and is responsible for protecting, conserving, and restoring water quality in coastal environments as detailed in Sections 30230 and 30231 of the California Coastal Act. The California Coastal Commission establishes policies that address shoreline public access and recreation, habitat protection, aesthetic resources, public works, and other uses. The act provides long-term protection of California's coastline for the benefit of the public. In order to meet the requirements of Sections 30230 and 30231, the California Coastal Commission requires site design, source control, and treatment BMPs. New development and redevelopment projects located in a Coastal Zone are required to apply for a Coastal Development Permit prior to construction. The Coastal Development Permit requires projects to demonstrate water quality protection through the implementation of appropriate BMPs.

The California Coastal Act includes specific policy language protecting wetlands, which are defined as all areas meeting at least one wetland parameter. California Public Resources Code, Section 30233, limits permissible uses within wetlands to a handful of authorized uses, including "nature study" and "similar resource-dependent activities." Even these limited activities are only permitted "where feasible mitigation measures have been provided to minimize adverse environmental effects" and "where there is no feasible less environmentally damaging alternative."

Regional

Central Coast Basin Plan

Each RWQCB is required to adopt a Water Quality Control Plan or Basin Plan that recognizes and reflects the regional differences in existing water quality, the beneficial uses of the region's ground and surface water, and local water quality conditions and problems.

The Project corridor is located in the Central Coast Basin, Region 3. The Water Quality Control Plan for the Central Coast Basin was adopted in 1971 and last revised in 2019. The Central Coast Basin Plan provides direction on the beneficial uses of state waters in Region 3, describes the water quality that must be maintained to support such uses, and provides programs, projects, and other actions necessary to achieve the standards established in the Central Coast Basin Plan.

Santa Cruz Mid-County Groundwater Sustainability Plan

The State of California enacted the Sustainable Groundwater Management Act, effective January 1, 2015, as the first legislation in the state's history to mandate comprehensive sustainable groundwater resources management.

The Santa Cruz Mid-County Groundwater Agency was formed under the Sustainable Groundwater Management Act to develop the Santa Cruz Mid-County Groundwater Sustainability Plan for the Santa Cruz Mid-County Groundwater Basin, which is a high priority groundwater basin in critical overdraft and threatened by seawater intrusion (MCGA 2019). The intent of the Santa Cruz Mid-County Groundwater Sustainability Plan is to guide long-term management of the shared groundwater resource to ensure a reliable water supply for community needs and the natural environment now and into the future.

Of note, the West Santa Cruz Terrace Groundwater Basin is not subject to the Sustainable Groundwater Management Act and thus does not have a groundwater sustainability plan (California's Groundwater Bulletin 118 2004).

Local

City of Santa Cruz General Plan

The *Civic and Communities* chapter of the City's General Plan contains goals, policies and actions that set forth measures to avoid and minimize adverse impacts to drainage patterns and stormwater systems including to provide for a sustainable and efficient stormwater system (Goal CC5). Policy CC5.1 to develop and maintain a Stormwater Master Plan and 12 accompanying actions set forth measures to manage stormwater drainage and water quality. In addition, several policies and actions in other chapters of the City's General Plan also seek to protect critical facilities and new development from flood hazards (HZ1 and HZ6 and actions) and hazards from tsunamis or dam failure (HZ6.6).

City of Santa Cruz Municipal Code

The City's Municipal Code, Section 16.19.140, requires that any construction project, including those undertaken under any permit or approval granted pursuant to Titles 15 (Streets and Sidewalks), 18 (Buildings and Construction), and 24 (Zoning) of the City's Municipal Code, shall implement BMPs including the City's mandatory BMP detailed in the latest BMP manual published by the City's Public Works Department. BMPs are required to be maintained in full force and effect throughout the life of a project.

The Grading Ordinance is a subset of Title 18, *Buildings and Construction*, of the City's Municipal Code and is included in Chapter 18.45, *Excavation and Grading Regulations*. It provides technical regulations of grading and excavation, in conjunction with the Environmental Resource Management provisions (City's Municipal Code, Title 24, Chapter 24.14), in order to safeguard life, health, safety, and the public welfare; protect fish and wildlife, riparian corridors and habitats, water supplies, and private and public property; and protect the environment from the effects of flooding, accelerated erosion, and/or deposition of silt. The ordinance accomplishes this by providing guidelines, regulations, and minimum standards for clearing, excavation, cuts, fills, earth moving, grading operations (including cumulative grading), water runoff and sediment control. In addition, the ordinance includes provisions regarding administrative procedures for issuance of permits and approval of plans and inspections during construction and subsequent maintenance. Section 18.45.110 also provides erosion control requirements for cut/fill slopes in addition to the requirements outlined in Section 24.14.060.

Section 24.14.400, *Floodplain Management*, sets forth requirements and procedures to protect properties against flood hazards and comply with National Flood Insurance Program requirements. The regulations set forth programs for floodplain management and specify circumstances in which floodproofing of structures may be required.

Santa Cruz County General Plan and Local Coastal Program

The County's General Plan and Local Coastal Program (1994) also provides the following objectives and policies to protect surface water quality and groundwater:

- **Objective 5.4. Monterey Bay and Coastal Water Quality.** To improve the water quality of Monterey Bay and other Santa Cruz County coastal waters by supporting and/or requiring the best management practices for the control and treatment of urban runoff and wastewater discharges in order to maintain local, state, and national water quality standards, protect

County residents from health hazards of water pollution, protect the County's sensitive marine habitats and prevent the degradation of the scenic character of the region.

- **Policy 5.4.1. Protecting the Monterey Bay National Marine Sanctuary from Adverse Impacts.** Prohibit activities which could adversely impact sensitive habitats of the Monterey Bay National Marine Sanctuary, including the discharge of wastes and hazardous materials. The main sources of concern are wastewater discharge, urban runoff, toxic agricultural drainage water, including that originating outside of Santa Cruz County, and the accidental release of oil or other hazardous material from coastal tanker traffic.
- **Policy 5.4.14. Water Pollution from Urban Runoff.** Review proposed development projects for their potential to contribute to water pollution via increased storm water runoff. Utilize erosion control measures, on-site detention and other appropriate storm water best management practices to reduce pollution from urban runoff.
- **Policy 5.7.1. Impacts from New Development on Water Quality.** Prohibit new development adjacent to marshes, streams and bodies of water if such development would cause adverse impacts on water quality which cannot be fully mitigated.
- **Policy 5.7.6. Maintaining Saltwater Inflow to Coastal Lagoons.** Prohibit new development, site alteration or road projects adjacent to coastal lagoons unless it can be demonstrated that such projects will not restrict, impound or otherwise interfere with the natural drainage patterns and tidal circulation.
- **Policy 6.4.1. Geologic Hazards Assessment Required in Flood Hazard Areas.** Require a geologic hazards assessment of all development proposals within the County's flood hazard areas in order to identify flood hazards and development constraints.
- **Policy 6.4.2. Development Proposals Protected from Flood Hazard.** Approve only those grading applications and development proposals that are adequately protected from flood hazard and which do not add to flooding damage potential. This may include the requirement for foundation design which minimizes displacement of flood waters, as well as other mitigation measures.
- **Policy 6.4.3. Development on or Adjacent to Coastal Bluffs and Beaches.** Allow development in areas immediately adjacent to coastal bluffs and beaches only if a geologist determines that wave action, storm swell and tsunami inundation are not a hazard to the proposed development or that such hazard can be adequately mitigated. Such determination shall be made by the County Geologist, or a certified engineering geologist may conduct this review at applicant's choice and expense. Apply Coastal Bluffs and Beaches policies.
- **Policy 6.4.4. Locate Public Facilities Outside Flood Hazard Areas.** Require new utilities, critical facilities, and non-essential public structures to be located outside the 100-year flood and coastal high hazard areas, unless such facilities are necessary to serve existing uses, there is no other feasible location, and construction of these structures will not increase hazards to life or property within or adjacent to the floodplain or coastal inundation areas.

Santa Cruz County Municipal Code

The County Department of Environmental Health Services monitors water quality within the County. The department also works with the RWQCB to regulate and monitor water quality. Chapter 16.24 of the County's Municipal Code also includes policies for the protection of water quality regarding

increases in turbidity and settleable solids. In addition, Chapter 7.79 of the County's Municipal Code provides regulations for runoff control, including compliance with NPDES stormwater discharge permits. In addition, Chapter 16.20 of the County's Municipal Code provides grading regulations to safeguard health, safety, and the public welfare; to minimize erosion and the extent of grading; to protect fish and wildlife; to protect the watersheds; to ensure the natural appearance of grading projects; and to otherwise protect the natural environment of the County.

3.8.3 Methodology and Significance Thresholds

Methodology

This section describes the potential environmental impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* relevant to hydrology and water quality. The impact analysis is based on an assessment of baseline conditions for the Project corridor, including climate, topography, watersheds and surface waters, groundwater, and floodplains (refer to Section 3.8.1, *Existing Conditions*) and the potential changes to these conditions that would be caused by project construction and operation in light of relevant regulations and policies. This analysis identifies potentially significant impacts based on the identified thresholds and recommends mitigation measures, when necessary, to avoid or minimize impacts.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of hydrology and water quality, as well as the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For the purposes of this Environmental Impact Report, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater 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:
    1. Result in substantial erosion or siltation on- or off-site.
    2. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.
    3. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.
    4. Impede or redirect flood flows.

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.

Threshold D should be understood against the backdrop of the California Supreme Court's decision in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) (62 Cal.4th 369, 377–378). In that case, the court held that "agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project's future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users. In those specific instances, it is the *project's* impact on the environment—and not the *environment's* impact on the project—that compels an evaluation of how future residents or users could be affected by exacerbated conditions" (original italics). When the case was remanded from the Supreme Court down to the Court of Appeal, the latter body noted that, for a public project, a lead agency could choose to disregard these limitations on the scope of CEQA analysis, and could voluntarily address the effects of pre-existing environmental hazards of project users (*California Building Industry Association v. Bay Area Air Quality Management District* (2016) 2 Cal.App.5th 1067, 1082–1083).

In light of the *California Building Industry Association v. Bay Area Air Quality Management District* decision, the City is not required by CEQA to address the extent to which trail users could be subject to risks from seiches, tsunamis, or mudflows. Even so, the City believes that such issues are important from a public policy standpoint and has addressed them for that reason. Thus, readers should treat the following discussion of these impacts as being beyond the scope of CEQA and provided to the public on a voluntary basis in the interests of full disclosure.

3.8.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold A:	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
Threshold E:	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact HYD-1 THE PROJECT WOULD NOT VIOLATE ANY WATER QUALITY STANDARDS OR WASTE DISCHARGE REQUIREMENTS OR OTHERWISE SUBSTANTIALLY DEGRADE SURFACE OR GROUNDWATER QUALITY NOR CONFLICT WITH WATER QUALITY CONTROL PLAN. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Construction of the Project would include excavation of material sources, clearing and grubbing, tree removal; grading, retaining wall construction, drainage improvements, placement of crushed aggregate base and paved surface; and revegetation, installation of fencing, signs, and other trail and safety related features. As described in Section 2.6, *Project Construction* (**Table 2-2**), construction of the Project (Ultimate Trail Configuration) would disturb approximately 3 acres.

Construction staging, equipment staging, and stockpiling would take place on existing disturbed or paved areas along the railroad right-of-way, at least 50 feet from drainages or waterways. Potential construction staging areas include vacant land identified in Section 2.6.1, *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. All equipment and materials would be stored, maintained, and refueled in designated portions of the staging areas in accordance with permit requirements. As such, there would be no staging in areas with sensitive biological resources or adjacent to drainages.

Construction of the Project could result in soil erosion due to earthmoving activities such as excavation, grading, soil compaction and moving, soil stockpiling, and slope modification. Although the Project corridor is generally flat, runoff during a large storm event could occur as sheet flow across the Project alignment. This runoff has the potential to result in substantial amounts of erosion, resulting in off-site sediment transport via stormwater runoff. The types of pollutants contained in runoff from construction sites along the Project corridor could include sediments and contaminants such as oils and fuels from construction equipment. Additionally, existing pollutants that may be present in the Project corridor, such as nutrients, pesticides, herbicides, trace metals, and hydrocarbons, could attach to sediment and be transported downstream through erosion to nearby drainages or into Monterey Bay, contributing to degradation of water quality.

Construction of the Project could also potentially result in the accidental release of hazardous materials such as diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, transmission fluid, cement slurry, and other fluids required for the operation of construction vehicles or equipment. Motorized equipment used at the Project site during construction could also leak the previously described hazardous fluids due to inadequate or improper maintenance, unnoticed or unrepaired damage, improper refueling, or operator error. These accidentally released or leaked hazardous materials could directly or indirectly impact water quality during a subsequent storm event, when the spilled material could come in contact with or be washed into flowing water and eventually enter a nearby drainage or Monterey Bay. Similarly, groundwater could be contaminated through direct or indirect contact with potentially harmful or hazardous materials.

Because construction of the Project would disturb over 1 acre, it would be subject to the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP that must describe the site, facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved

local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Additionally, inspection of construction sites before and after storms is required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary. Implementation of the required SWPPP would reduce the potential for eroded soil and any contaminants attached to that soil to contaminate a waterbody following a storm event.

The City's Grading Ordinance contains expanded requirements for grading, site erosion control, and requirements. This ordinance affects grading construction sites of any size. In addition, Chapter 7.79 of the County's Municipal Code provides regulations for runoff control, including compliance with NPDES stormwater discharge permits, and Chapter 16.20 of the County's Municipal Code provides grading regulations to minimize erosion.

Further, the Project includes BMPs to be implemented during construction to include but are not limited to the following:

- Limit grading activities during periods of high wind (over 15 miles per hour) or water for dust suppression
- Water active construction areas as needed based on the activity, soil, and wind exposure
- Apply soil stabilizers on inactive construction areas (disturbed lands unused for 4 consecutive days)
- Apply native hydro-seed or non-toxic binders to exposed areas after cut/fill operations
- Maintain at least 2-foot freeboard in haul trucks, and cover all trucks hauling dirt, sand, or other loose materials
- Cover inactive storage piles
- Install perimeter protection (e.g., silt fence, fiber rolls) to prevent contaminated construction runoff from leaving the construction site
- Install project storm drain catch basin and inlet protection (e.g., inlet filters, fiber rolls, gravel bags)
- Implement additional measures in the Soil Management Plan to be prepared by the City, County, or their construction contractor

Implementation of the BMPs to be included in the construction specifications and compliance with the NPDES-required SWPPP, City's Grading Ordinance, and County's grading regulations would reduce the risk of water degradation on and off site from soil erosion and other pollutants related to construction activities would not obstruct or conflict with the implementation of the Central Coast Basin Plan. Therefore, this construction-related impact of the Project would be **less than significant**. No mitigation is required.

Operation

There is a possibility that project operation could generate pollutants that could degrade the surface water quality of downstream receiving waters. The Central Coast Basin Plan stormwater program objectives include identification and elimination of pollutant contact with stormwater by implementation of BMPs.

Pollutant sources could include trash and debris from inadvertent littering and illegal disposal, pathogens from pet wastes, and contaminants in stormwater runoff.

As described in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, the trail would extend past several areas with existing trash receptacles (e.g., Main Beach, Santa Cruz Harbor, Simpkins Swim Center), and additional trash receptacles, including recycling receptacles and dog waste stations, would be added at four roadway crossings (Mott Avenue, Seabright Avenue, 7th Avenue, 17th Avenue).

The current plans for the Project include several stormwater quality management measures, such as the relocation and/or connection to existing systems at 3rd Street/Beach Street intersection, the east side of the SLR Trestle Bridge, Hiawatha Avenue connection, Mott Avenue intersection, Seabright Avenue intersection, Murray Street (between Seabright Avenue and Woods Lagoon Railroad Bridge), East Harbor Connection, 7th Avenue intersection, Live Oak Avenue connection, and El Dorado Avenue connection. In addition, as described in Section 2.6.1 under *Stormwater Drainage*, the Project includes the installation of a V ditch with down drains at the backs of proposed retaining walls to intercept upstream and slope drainage in Segment 9 and storm drain catch basins, pipes, and outlet structures (with outlet energy dissipation) along the length of Segment 9.

Therefore, runoff from new or replaced impervious trail surfaces in Segment 9 would discharge to a proposed graded natural material swale on the northern or southern side of the trail. As described in Section 2.6.1 (under *Stormwater Drainage*), these drainage systems (e.g., swales, V ditches, French drains, pipes) would comply with County Design Criteria Standards, Section H as follows: All drainage improvements shall be designed to convey a minimum 10-year storm event. In addition, means of conveying flood overflows from the site would be per the 25-year storm return period. All runoff generated by the impervious trail surface would first drain to the proposed natural swales alongside the trail. Any trail-generated flows and off-site flows that exceed the capacity (i.e., overflows) of the proposed swales would be diverted to a proposed storm drainpipe system under the trail.

Any off-site flows that would be intercepted by existing or proposed storm drain infrastructure (e.g., catch basins, sidewalk underdrains, V ditches, French drains, swales) would be piped in the new storm drain system under the proposed trail to an outlet structure at an existing storm drain system or creek downstream. Comingling of off-site and trail runoff would be avoided where practically feasible. Stormwater treatment devices (e.g., gross solids removal device, hydrodynamic separators, trash screens, and flow through water quality treatment devices) could be installed, as determined appropriate by the City and/or County, with the proposed storm drain system to treat off-site flows before ultimately discharging to a creek/drainage, river, or ocean, improving water quality.

In addition, general maintenance activities anticipated for the trail include trash/recycling collection and disposal, waste collection bags restock, drainage inspection and cleaning, and trail structure inspection and required maintenance.

The inclusion of stormwater drainage features and treatment devices described above and compliance with the NPDES-required SWPPP would reduce the risk of water degradation on and off site from soil erosion and other pollutants related to operational activities, would minimize the potential for water quality degradation, and would comply with the objectives in the Central Coast Basin Plan. Therefore, the operational impact of the Project would be **less than significant**. No mitigation is required.

In summary, the construction and operation impacts of the Project would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Impacts from implementation of the Interim Trail (Part 1) would be greater than those identified for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* because construction of the Interim Trail (Part 1) would require substantially more material movement (from demolishing the existing rail) than the Ultimate Trail Configuration, which could result in the additional off-site sediment transport and the potential release of additional pollutants. However, similar to the Ultimate Trail Configuration, implementation of the BMPs to be included in the construction specifications and compliance with the NPDES-required SWPPP, City's Grading Ordinance, and County's grading regulations would reduce the risk of water degradation related to construction activities and would ensure that construction activities would not obstruct or conflict with the implementation of the Central Coast Basin Plan.

Post construction, similar to the Ultimate Trail Configuration, the Interim Trail could generate pollutants from trash and debris from inadvertent littering and illegal disposal, pathogens from pet wastes, and contaminants in stormwater runoff that could degrade the surface water quality of downstream receiving waters. Similar to the Ultimate Trail Configuration, the Interim Trail would incorporate several design features for solid waste disposal and stormwater quality management to control and treat potentially contaminated stormwater runoff before ultimately discharging to a creek/drainage, river or ocean. In addition, general maintenance activities anticipated for the trail include trash/recycling collection and disposal, waste collection bags restock, drainage inspection and cleaning, and trail structure inspection and required maintenance. Refer to the discussion above for the Ultimate Trail Configuration. These stormwater drainage features and treatment devices would minimize the potential for water quality degradation; therefore, the Project ensure that operational activities would not obstruct or conflict with the implementation of the Central Coast Basin Plan.

Therefore, implementation of the Interim Trail (Part 1) would not violate any water quality standards or WDRs or otherwise substantially degrade surface or groundwater quality, and impacts would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would remove the trail and re-install the rail tracks/ties on the rail bed. The potential construction-related impacts would be similar to but slightly greater than that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and optional Interim Trail (Part 1). Demolition of the Interim Trail and rebuilding of the rail line would require substantially more material movement (from demolishing the paved trail), which could result in additional off-site sediment transport and the potential release of additional pollutants during construction activities. However similar to the Ultimate Trail Configuration and Interim Trail Part 1, implementation of the BMPs to be included in the construction specifications and compliance with the NPDES-required SWPPP, City's Grading Ordinance, and County's grading regulations would reduce the risk of water degradation related to construction activities and would not conflict or obstruct the implementation of the Central Coast Basin Plan. There would be no operational impacts because there would be no trail associated with Part 2. The impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* for construction and operational impacts. Refer to the discussion for Impact HYD-1, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the optional Interim Trail (Parts 1, 2, 3) would be an overall increase in construction activities that could result in a violation of water quality standards that could otherwise degrade surface or groundwater quality. However, all three parts of the Interim Trail would be required to comply with federal, state, and local regulations. Further, Parts 1, 2, and 3 would be constructed sequentially, with substantial time (estimate 25 years) between Parts 1 and 3, rather than concurrently. Therefore, the impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have greater impacts with respect to potential violation of water quality standards because the Interim Trail would require two additional construction and demolition activities that would require substantially more material movement than the Project without the optional Interim Trail. However, under either scenario (the Project with or without the optional Interim Trail) would include design features to protect water quality and would be required to comply with the NPDES-required SWPPP, City's Grading Ordinance, and County's grading regulations, which would reduce the risk of water degradation on and off site from soil erosion and other pollutants related to construction activities. Impacts related to operation would be similar with and without the optional Interim Trail. Therefore, under either scenario, the impacts related to water quality would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. It would be similar because construction activities could result in soil erosion due to earthmoving activities such as excavation, grading, soil compaction and moving, and soil stockpiling. Thus, adding this connection would slightly increase the construction and operational impacts of Project, with or without the Interim Trail. However, as described in Impact HYD-1, this impact would be reduced to **less than significant** with implementation of BMPs and compliance with the required SWPPP during construction; project design measures to manage stormwater flow and treat off-site flows before they ultimately discharge in at a creek/drainage, river, or ocean; and ongoing maintenance of these features and solid waste collection. No mitigation is required.

Threshold B:	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
Threshold E:	Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact HYD-2 THE PROJECT WOULD NOT SUBSTANTIALLY DECREASE GROUNDWATER SUPPLIES OR INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

The Project would not decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin.

Construction and operation of the Project would not use groundwater and therefore would not deplete groundwater resources. However, implementation of the Project could interfere with groundwater recharge by introducing approximately 13,157 square yards of paved imperious surfaces. Impervious surfaces would include new paved surfaces associated with widening the sidewalk in Segment 8 and new trail construction in Segment 9.

Approximately 1 and 1.2 miles of new paved trail associated with the Project would traverse the West Santa Cruz Terrace Ground Basin and Santa Cruz Mid-County Ground Basin, respectively, for a total of 2.2 miles traversing over the two groundwater basins. The typical width of the paved trail would be 12 feet. Following project construction, as discussed above and in Section 2.6.1 under *Stormwater Drainage*, stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swale included in the trail design. In Segment 8, there would be new and replaced impervious surfaces associated from widening the sidewalk, and the slight increased runoff would drain to adjacent vegetated areas. In Segment 9, as described for Impact HYD-1, runoff from new or replaced impervious trail surfaces would discharge to a proposed graded natural material swale on the northern or southern side of the proposed trail. All runoff generated by the impervious surfaces of the proposed trail would first drain to the proposed natural swales alongside the trail. Any trail-generated flows and off-site flows that exceed the capacity (i.e., overflows) of the proposed swales would be diverted to a proposed storm drainpipe system under the trail.

The small amount of new impervious surface area that the Project would introduce relative to the total surface area of each groundwater basin would be minimal. Further, it would be distributed along virtually the entire length of each basin and would be no more than approximately 12 feet wide at any given location. The dispersed nature of the new impervious surface over 1.6 miles (Segment 9), as well as the anticipated volume, would ensure that the infiltration capacity of each of the two basins would not be substantially altered compared to existing conditions. In addition, rainfall that could have infiltrated in the ground where the Project footprint is located (prior to the introduction of new impervious surface area) would surface flow over the paved portion of the trail as runoff, but it would have the same infiltration potential on adjacent lands as it did prior to implementation of the Project. Therefore, the dispersed nature of the new impervious surface would ensure that the infiltration capacity would not be substantially altered compared to existing conditions, consistent with the goals to protect groundwater levels and prevent groundwater overdraft.

This impact of the Project would be **less than significant** because new impervious surfaces would occupy a relatively small percentage of the surface area of underlying groundwater basins and would not substantially alter the infiltration capacity of those basins. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Similar to the Ultimate Trail Configuration, construction and operation of the Interim Trail (Part 1) would not use groundwater and therefore would not deplete groundwater resources because it is within the same Project corridor and would transverse the same groundwater basins. Also similar to the Ultimate Trail Configuration, the Interim Trail (Part 1) could interfere with groundwater recharge through the introduction of new impervious surfaces. However, similar to the Ultimate Trail Configuration, the dispersed nature of the new impervious surface over 1.6 miles (Segment 9), as well as the anticipated volume, would ensure that the infiltration capacity of each of the two basins would not be substantially altered compared to existing conditions. Additionally, in general, stormwater would surface flow from the new paved trail to the adjacent natural surfaces. Drainage improvements necessary to maintain existing overland flow patterns would be made in conjunction with trail construction. Therefore, rainfall that could have infiltrated in the ground along the Interim Trail Part 1 alignment prior to construction would surface flow over the paved portion of the trail as runoff, but it would have similar infiltration potential on adjacent lands as it did prior to implementation.

Therefore, the Interim Trail Part 1 would not substantially alter the infiltrations capacity of the groundwater basins and would not conflict or obstruct with implementation of the Santa Cruz Mid-County Groundwater Sustainability Plan, and impacts would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would not use groundwater and therefore would not deplete groundwater resources. Removing the paved trail and installing the rail tracks and ties would reduce the amount of impervious surface, compared to Part 1 of the Interim Trail, and would be similar to existing conditions. Therefore, it would not interfere with groundwater recharge through the introduction of impervious surfaces because infiltration potential would be similar to existing conditions prior to implementation. Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would not interfere with the sustainability goals to ensure groundwater is available for beneficial uses and a diverse population of beneficial users, prevent groundwater overdraft, and maintain or enhance groundwater levels where groundwater dependent ecosystems exist.

Therefore, the impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration. Refer to the discussion for Impact HYD-2, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the optional Interim Trail (Parts 1, 2, 3) would be an overall increase in the amount of impervious surfaces that would be constructed. Part 1 would introduce approximately 16,910 square yards of impervious pavement for the Interim Trail, as shown in **Table 2-4**, compared to 13,157 for the Ultimate Trail Configuration, as shown in **Table 2-2**. Part 2 would remove the

paved trail. Part 3 would re-introduce approximately 13,157 square yards of impervious pavement for the Ultimate Trail Configuration. This increase for the Interim Trail is because the Ultimate Trail Configuration includes viaducts that allow stormwater to infiltrate beneath them. The viaducts are not proposed for the Interim Trail.

However, infiltration capacity of each of the two basins would not be substantially altered compared to existing conditions due to the dispersed nature of the new impervious surface of surface runoff. In addition, optional Interim Trail (Parts 1, 2, 3) would not conflict or obstruct with implementation of the Santa Cruz Mid-County Groundwater Sustainability Plan. Therefore, the impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have slightly greater impacts with respect to interference with groundwater recharge, because the Interim Trail (Part 1) would result in greater amounts of new impervious surfaces (approximately 16,910 square yards) than the Ultimate Trail Configuration (approximately 13,157 square yards). This is because the Ultimate Trail Configuration includes several sections composed of viaducts, which are raised and thus allow for more stormwater infiltration for groundwater recharge. However, the Project, with or without the optional Interim Trail, is not anticipated to adversely affect the infiltration capacity of the two basins because of the dispersed nature of the new impervious surface and the relatively low volume of runoff that would infiltrate the ground compared to existing conditions. Therefore, under either scenario, the impacts related to groundwater recharge impacts to the Santa Cruz Mid-County Groundwater Sustainability Plan would be similar would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. The East Harbor Connection would add approximately 611 square yards of pavement (new impervious surface) to the approximately 13,157 square yards estimated for the Ultimate Trail Configuration and the 16,910 square yards estimated for the optional Interim Trail. In addition, stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swale included in the trail design, resulting in little to no effect on the infiltration capacity of the Santa Cruz Mid-County Groundwater Basin or its sustainability plan. Impacts would be less than **less than significant**. No mitigation is required.

Threshold 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 (1) result in substantial erosion or siltation on- or off-site, (2) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite, (3) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or (4) impede or redirect flood flows.

Impact HYD-3 THE PROJECT WOULD NOT SUBSTANTIALLY ALTER DRAINAGE PATTERNS IN THE PROJECT CORRIDOR OR VICINITY. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Project would not substantially alter drainage patterns in the Project corridor or immediate vicinity in a manner that could (1) result in substantial erosion or siltation, (2) substantially increase the rate or amount of surface runoff that could result in flooding, (3) create or contribute to runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or (4) impede or redirect flood flows.

Construction and operation of the Project would not result in alterations of the course of a stream or river. There are four locations where the trail would cross an identified waterway, including Pilkington Creek, Woods Lagoon (Santa Cruz Harbor), Leona Creek, and Stream 1545. A viaduct with fiberglass reinforced polymer (FRP) decking on pilings would be installed to cross Pilkington Creek, Leona Creek, and Stream 1545 waterways, and a cantilever off the Woods Lagoon Railroad Bridge would be installed to cross Santa Cruz Harbor. Alternatively, at Pilkington Creek, a clear span bridge could be used, in which case each abutment would be supported by drilled concrete pilings outside the ordinary high water mark.

Construction

Land-disturbing construction activities associated with implementation of the Project, such as vegetation clearing, grading, and excavation of Project sites, could result in the localized alteration of drainage patterns and the temporarily increase in erosion and sedimentation in the construction area. The potential erosion and sedimentation impacts of increased runoff are discussed above under Impact HYD-1. With compliance with the NPDES-required SWPPP, which includes the implementation of erosion and sediment control BMPs, any short-term impacts resulting from alterations of drainage and hydrology during construction would be **less than significant**.

Operation

Once constructed, the Project would result in an additional 13,157 square yards of new impervious surfaces from the new or replaced trail surfaces that could result in minor changes to localized drainage patterns. In general, stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swale included in the trail design. All off-site flows would match existing condition drainage patterns.

In Segment 8, there would be new and replaced impervious surfaces associated with sidewalk widening, and the slight increased runoff would drain to adjacent vegetated areas and existing storm drain systems. Therefore, runoff in Segment 8 along Beach Street would continue to flow and discharge based on existing drainage patterns in the roadway.

In Segment 9, runoff from new or replaced impervious trail surfaces would discharge to a proposed graded natural material swale on the northern or southern side of the proposed trail. As described in Section 2.6.1, these drainage systems (e.g., swales, V ditches, French drains, pipes) would convey the 10-year design storm and 25-year design storm for flood overflows. All runoff generated by the impervious trail surface would first drain to the planned natural swales alongside the trail. Any trail-generated flows and off-site flows that exceed the capacity (i.e., overflows) of the planned swales would be diverted to the proposed storm drainpipe system under the trail. Any off-site flows that

would be intercepted by existing or planned storm drain infrastructure (e.g., catch basins, sidewalk underdrains, V ditches, French drains, swales) would be piped in the new storm drain system under the trail to an outlet structure at an existing storm drain system or creek downstream. A weir in a diversion junction structure would separate the swale and pipe flows, prioritizing low flows draining to the swales to comply with the City's Stormwater BMP for Private and Public Development Projects and the County's Design Criteria Standards for the Construction of Storm Drains. Comingling of off-site and trail runoff would be avoided where practically feasible. The proposed swales and drainpipes would be adequate to convey the surface flows and would not result in flooding on or off site or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

In addition, stormwater treatment devices, including hydrodynamic separators, could be installed in storm drain system to treat off-site flows before they ultimately discharge to a drainage leading to a waterway or the bay, improving water quality by reducing the amount of polluted runoff that could occur as a result of the implementation of the trail.

Therefore, the Project would not substantially alter existing drainage patterns along the Project corridor or immediate vicinity in a manner that would result in flooding on or off site or create, contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff. Impacts would be **less than significant.** No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the Interim Trail (Part 1) would require fewer improvements for waterway crossings than the Ultimate Trail Configuration and would not result in alterations of the course of a stream or river.

CONSTRUCTION

Similar to the Ultimate Trail Configuration, land-disturbing activities associated with the Interim Trail Part 1 could result in the localized alteration of drainage patterns and the temporary increase in erosion and sedimentation in the construction area. However, impacts could be greater due the increase in demolition and construction activities required for removal of the rail. However, with compliance with the NPDES-required SWPPP, which includes the implementation of erosion and sediment control BMPs, any short-term impacts resulting from temporary alterations of drainage and hydrology during construction would be **less than significant**. No mitigation is required.

OPERATION

Like the Ultimate Trail Configuration, in general, stormwater would surface flow from the new paved trail to the adjacent natural surfaces. Drainage improvements necessary to maintain existing overland flow patterns are included in project design and would be made in conjunction with trail construction. Refer to the discussion for Impact HYD-3 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The proposed swales and drainpipes would be adequate to convey the surface flows and thus would not result in flooding on or off site or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems. In addition, stormwater treatment devices (e.g., hydrodynamic separators) would be installed in storm drain system to treat off-site flows before they ultimately discharge to a drainage leading to a

waterway or the bay, as determined appropriate by the City and/or County, improving water quality by reducing the amount of polluted runoff that could occur as a result of the implementation of the trail. Impacts would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line (Part 2) would not result in alterations of the course of a stream or river.

Similar to the Ultimate Trail Configuration and Interim Trail Part 1, land-disturbing activities associated with the demolition of the Interim Trail and the rebuilding of the rail line (Part 2) could result in the localized alteration of drainage patterns and the temporary increase in erosion and sedimentation in the construction area. However, impacts could be greater due the increase in demolition and construction activities. However, with compliance with the NPDES-required SWPPP, which includes the implementation of erosion and sediment control BMPs, any short-term impacts resulting from alterations of drainage and hydrology during construction would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration. Refer to the discussion for Impact HYD-3, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the optional Interim Trail (Parts 1, 2, 3) would be an overall increase in construction and demolition activities that could result short-term impacts resulting from alterations of drainage and hydrology during construction. However, all three parts of the Interim Trail would be required to comply with federal, state, and local regulations. Therefore, the impacts would be **less than significant**. Further, Parts 1, 2, and 3 would be constructed sequentially, with substantial time (estimate 25 years) between Parts 1 and 3, rather than concurrently. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have greater impacts with respect to any short-term impacts resulting from alterations of drainage and hydrology during construction because the Interim Trail would require two additional construction phases (Parts 2 and 3) and additional demolition activities (Parts 1 and 2) that would require substantially more material movement than the Project without the Interim Trail. However, the Project, with and without the optional Interim Trail, would be required to comply with the NPDES-required SWPPP, which includes the implementation of erosion and sediment control BMPs.

Once constructed, the Project, with and without the optional Interim Trail, would have similar operational impacts with respect the alterations of drainage and hydrology because stormwater would surface flow from the new paved trail to the adjacent natural surfaces, whether in the Interim Trail or Ultimate Trail alignment. Drainage improvements necessary to maintain existing overland flow patterns would be made in conjunction with trail construction. Therefore, under

either scenario, the impacts related to drainage alterations would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. It would be similar because, in general, stormwater would surface flow from the new impervious surfaces into the drainage system included in the trail design (e.g., swales, V ditches, French drains, pipes), similar to that shown for the Ultimate Trail Configuration at the west end of Segment 9 where it is on a slope, and into the existing drainage system on the East Harbor service road. All off-site flows would match existing condition drainage patterns. In addition, as determined appropriate by the City/County, stormwater treatment devices, including hydrodynamic separators, would be installed in the storm drain system to treat off-site flows before they ultimately discharge to a drainage leading to the Harbor, improving water quality by reducing the amount of polluted runoff that could occur as a result of the implementation of the trail. Impacts would be **less than significant**. No mitigation is required.

Threshold D:	In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Impact HYD-4 THE PROJECT WOULD NOT RISK RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION IN FLOOD HAZARD, TSUNAMI, OR SEICHE ZONES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Project corridor is located in flood hazard and tsunami inundation zones. Once constructed and in use, the trail would not involve the use of hazardous materials or other pollutants that could be inadvertently released due to Project inundation in a flood hazard, tsunami, or seiche zone.

Flood Hazard

As described in Section 3.8.1, the Project corridor crosses the Santa Cruz Harbor Zone AE, an area subject to inundation in a 100-year flood event (Balance Hydrologics 2022). In addition, the far western portion of the Project crosses a FEMA Zone A99 along Beach Street between Pacific Avenue and the SLR Trestle Bridge. There are no proposed drainage or infrastructure improvements located along Beach Street.

As described in Section 2.4.1 under *Waterway Crossings and Viaducts*, the Project includes construction of a cantilever with FRP deck system on the northern side of the Woods Lagoon Railroad Bridge to cross the Santa Cruz Harbor. The existing bridge is 420 feet long, consisting of seven equal 60-foot spans. The proposed cantilever would be connected to the side of the existing precast concrete railroad bridge and comprise a composite deck system. The deck is envisioned as an FRP composite with steel or FRP framing support elements. The existing Woods Lagoon Railroad Bridge is located in the FEMA Special Flood Hazard Area Zone AE, which is an area subject to inundation in a 100-year flood event.

The additional crossings in the form of viaducts over streams and sensitive habitat include Pilkington Creek (which could also be a clear span bridge structure), the approach to Murray Street bridge, Leona Creek, and Stream 1545 between Live Oaks Avenue and El Dorado Avenue (near Twin Lakes

State Beach trails north of Schwan Lagoon). However, these areas do not encroach on FEMA Special Flood Hazard Areas.

The proposed cantilever on the existing Woods Lagoon Railroad Bridge infrastructure matches existing grade, and the existing railroad bridge has a soffit elevation ranging from 25.3 to 25.5 feet, which is above the 9-foot AE associated with the Santa Cruz Harbor. Therefore, the Project would not result in a release of pollutants due to project inundation in a flood hazard area.

Seiche

The proposed alignment for Segment 9 passes just north of Schwan Lagoon, the only existing enclosed or semi-enclosed body of water such as bays and lakes along Project corridor. However, due to the limited size of the lagoon, any potential inundation associated with seiches would be restricted to the immediate shore and would not cause inundation of the trail itself. Therefore, the Project would not result in a release of pollutants due to project inundation due to seiche.

Tsunami

As shown on **Figure 3.8-3**, 0.8 mile of the Project corridor is located in a tsunami inundation zone. Inundation of the proposed paved recreation trail in this portion of the corridor as a result of a tsunami would not result in the potential release of pollutants as the operation of the Project does not include any pollutants.

Therefore the Project would not result in the risk release of pollutants due to project inundation from a flood, tsunami, and/or seiche. The potential impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

As described above for the Ultimate Trail Configuration, the Project corridor is located within two different flood hazard zones, so implementation of the Interim Trail Part 1 would also place the trail in these flood hazard zones. As described in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, the Interim Trail would include any drainage or infrastructure improvements necessary to maintain existing overland flow patterns and would not result in a release of pollutants due to project inundation in a flood hazard area.

A portion of the Project corridor and thus the Interim Trail would pass just north of Schwann Lagoon, the only existing enclosed or semi-enclosed body of water along Project corridor. However, due to the limited size of the lagoon, any potential inundation associated with seiches would be restricted to the immediate shore and would not cause inundation of the trail itself. Therefore, the implementation of the Interim Trail Part 1 would not result in a release of pollutants due to project inundation due to seiche.

A portion of the Project corridor and thus the Interim Trail Part 1 are located in a tsunami inundation zone. Inundation of the proposed paved recreation trail in this portion of the corridor as a result of a tsunami would not result in the potential release of pollutants as the operation of the Project does not include any pollutants that would be released.

Therefore, similar to the Ultimate Trail Configuration, the Interim Trail Part 1 would not result in the risk release of pollutants due to project inundation from a flood, tsunami and/or seiche. The potential impact would be **less than significant.** No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

As stated above, the Project corridor is located in flood and tsunami zone but not likely to release pollutants as described above. The rail line would be built in accordance with American Railway Engineering and Maintenance-of-Way Association, Federal Railroad Administration, and California Public Utility Commission requirements, as applicable, which include provisions for rail construction within a flood hazard and tsunami zone. Therefore, demolition of the Interim Trail and rebuilding of the rail line (Part 2) would not result in a release of pollutants due to project inundation in a flood hazard area.

Therefore, the impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the Ultimate Trail Configuration. Refer to the discussion for Impact HYD-4, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the optional Interim Trail (Parts 1, 2, 3) would be a similar to the Project because construction of proposed improvements would be located outside the designated flood hazard areas and the inundation area associated with Schwann Lagoon. In addition, the proposed features would not result in the release of pollutants as a result of inundation from a tsunami. Therefore, the impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would have similar impacts with respect to any impacts resulting in the release of pollutants as a result of inundation from a flood and tsunami. Under either scenario, the Project alignment would cross a FEMA flood hazard and would be located in a tsunami inundation area. However, for the reasons described in the analysis above for Impact HYD-4 impacts would be not result in the release of pollutants. Overall, the impact of the Project, with or without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impacts described above for the Ultimate Trail Configuration and the optional Interim Trail because the trail would be located in a tsunami inundation area. In addition, no improvements would be located in a flood hazard area. In addition, this portion of the trail would not be located near Schwann Lagoon. Impacts would be **less than significant**, and no mitigation is required.

3.8.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
HYD-1. The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality nor conflict with water quality control plan.	LTS	LTS Similar, slightly greater	LTS Similar, slightly greater	LTS Similar
HYD-2. The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.	LTS	LTS Similar, slightly greater	LTS Similar, slightly greater	LTS Similar
HYD-3. The Project would not substantially alter drainage patterns in the Project corridor or vicinity.	LTS	LTS Similar, slightly greater	LTS Similar, slightly greater	LTS Similar
HYD-4. The Project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	LTS	LTS Similar, slightly less	LTS Similar	LTS Similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.9 Land Use and Planning

This section identifies and evaluates impacts related to land use and planning that may arise through implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)*. Existing land uses within the Project corridor and adjacent to the corridor in the City of Santa Cruz (City) or unincorporated Santa Cruz County (County), along with applicable land use policies and regulations, are described in this section. The Project is proposed by the City in coordination with the County and the Santa Cruz County Regional Transportation Commission (RTC); therefore, the overall consistency of the Project has been assessed in relation to applicable land use designations, zoning regulations, and other relevant plans, ordinances, and standards of these three agencies. **Table 3.9-1** presents a summary of Project impacts regarding land use and planning.

Table 3.9-1 Summary of Impacts on Land Use and Planning[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
LUP-1. The Project would not physically divide an established community.	Less than Significant	None required	Less than Significant
LUP-2. The Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	Less than Significant	None required	Less than Significant
Beneficial Effect. The Project would increase connectivity across established communities by providing a pedestrian and bicycle trail using an existing corridor without disturbing existing residential, commercial, and industrial uses along the Project corridor.			

[a] The impacts apply to both the *Proposed Project: Trail next to Rail line (Ultimate Rail with Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.9.1 Existing Conditions

Regional Setting

The County occupies approximately 600 square miles of urban and rural lands bordered by beaches and coastal bluffs along Monterey Bay and backed by coastal mountains and valleys to the east. The County supports a diverse range of habitats and land uses that include redwood forests in the mountains in the northern portion of the County, urban and residential development in the central portion, and agricultural land uses in the northwestern and southern portions. The majority of the population in the County is centrally located in urban and residential development.

Land uses in the County are predominately open space, which accounts for approximately 64% of the land uses (169,600 acres). This is followed by lands designated for residential uses (65,152 acres, or 24.5%), public and institutional lands (24,252 acres, or 9.1%) and commercial and industrial lands (6,431 acres, or 2.4%) (Santa Cruz County 2022).

Regional Land Uses

The Project corridor is located in the central portion of the County, within the City of Santa Cruz to the west and the unincorporated Live Oak area of the County to the east. The City of Santa Cruz is the County seat and the largest city in the County, with a population of approximately 64,075 people as of 2022 (California Department of Finance 2022).

The City's land use patterns are the result of historical development patterns, including the City's original development, the establishment of the University of California Santa Cruz campus, and recent land use policies guided by the City. Approximately one-third of the City is occupied by residential land uses, and one-quarter of the City is developed as public or institutional lands (City of Santa Cruz 2012).

Live Oak is a small unincorporated community located east of the City, between the Cities of Santa Cruz and Capitola. Live Oak has a population of approximately 17,000 people and includes mostly residential uses, as well as commercial and industrial land uses, offices, schools, shops, and restaurants (U.S. Census 2020).

Project Corridor Setting

Project Corridor Land Uses

The Project corridor is 2.2 miles, located along the RTC-owned Santa Cruz Branch Rail Line corridor in central Santa Cruz County. The Project corridor would extend from the Beach Street/Pacific Avenue roundabout within the City limits on the west, excluding the recently constructed San Lorenzo River (SLR) Trestle Bridge Improvements, to the eastern side of 17th Avenue in the unincorporated Live Oak area of the County on the east. Land uses along the Project corridor include residential, commercial, industrial, public lands, and parks and recreation.

Segment 8, extending approximately 0.6 mile, begins at the Pacific Avenue/Beach Street roundabout and travels along Beach Street. Land uses inland of Beach Street consist primarily of commercial uses, including shops, restaurants, lodging, parking, and other visitor-serving retail uses, with some residential uses. Land uses on the ocean side of Beach Street include the Santa Cruz Main Beach and the Santa Cruz Beach Boardwalk, a popular oceanfront amusement park. The Project corridor would then cross the SLR Trestle Bridge, which is not part of the Project, toward the intersection East Cliff Drive and Murray Street.

Segment 9, extending approximately 1.6 miles, would continue along the inland side of the tracks along Murray Street, over the Santa Cruz Harbor on the Woods Lagoon Railroad Bridge, and continue along the inland side of the tracks through 7th Avenue and upper Twin Lakes State Beach, and then switch to the coastal side after the El Dorado Avenue connection until it terminates at 17th Avenue. Land uses along Murray Street and through 7th Avenue consist primarily of residences, the Pacific Gas & Electric (PG&E) Services Center, and some retail, restaurants, and other commercial uses. The Project corridor also crosses the Santa Cruz Harbor, which generally demarcates the City's eastern boundary. Land uses from 7th Avenue to 17th Avenue consist primarily of residences, vegetated open space along upper Twin Lakes State Beach, and the Simpkins Swim Center.

3.9.2 Regulatory Setting

This section includes a description of relevant federal, state, regional, and local plans and policies, with a consistency determination presented in **Tables 3.9-2** and **3.9-3**.

Section 2.7, *Required Permits and Approvals*, states that because the Project is being implemented by the City, the County and RTC do not have to certify the Environmental Impact Report (EIR) on their own. However, the County and RTC would rely on the EIR to carry out discretionary approvals related to the Project; therefore, consistency of the Project with applicable City land use plans and policies is evaluated as part of the Project analysis, and consistency of the Project with applicable County and RTC land use plans and policies is evaluated in this EIR for informational purposes.

As part of the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan, the Project has been planned and designed in coordination with many responsible agencies and stakeholders, including but not limited to the California Coastal Commission, California Public Utilities Commission, California Department of Fish and Wildlife, and the public. As part of this process, consideration has been given to existing and proposed programs and plans to determine the design and project features.

Federal

Coastal Zone Management Act

The Coastal Zone Management Act was passed by Congress in 1972. It provides for management of coastal resources and aims to protect, restore, and enhance coastal resources through three programs administered by the National Oceanic and Atmospheric Administration in partnership with coastal states. In California, the Coastal Zone Management Act is administered in partnership with the California Coastal Commission. In partnership with coastal cities and counties, it plans and regulates the use of land and water in the Coastal Zone. Development activities, which are broadly defined by the Coastal Zone Management Act to include (among other activities) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a coastal permit from either the California Coastal Commission or the local government. The National Coastal Zone Management Program balances competing land and water issues. Programs under the Coastal Zone Management Act include the National Estuarine Research Reserve System, which protects estuaries for use as field laboratories that improve understanding of estuaries, and the Coastal and Estuarine Land Conservation Program, which assists with acquisition of coastal property or easements for conservation purposes.

State

California Coastal Act

The California Coastal Act of 1976 establishes procedures for the review of proposed developments in the Coastal Zone and policies for the protection of coastal resources and public access to the coastline. There are a number of Coastal Act regulations in the California Public Resources Code that pertain to land use and planning. These include articles that protect the coastal lands and natural resources that they support while providing public access to the greatest extent possible. There are also provisions for providing the appropriate number and distribution of public facilities to support the continuous population growth in California. These include recreational opportunities such as trails, access

facilities, and public restrooms. There are also provisions to protect the rights of private land owners and the land uses on private properties that neighbor public access and coastal areas.

California State Parks General Planning Handbook

The California State Parks General Planning Handbook (State Parks 2010) guides planning efforts within and across California State Parks. Guidelines have been established to balance public use while protecting and enhancing natural resources and providing educational opportunities to the public. The handbook provides a tool to standardize planning efforts across the State of California. The overall goals of the handbook are to guide state park planning practices to guide natural resources management, restoration of unique and protected wildlife and vegetation, public involvement, and protection of sensitive resources across the parks and to provide educational opportunities for the public to use state park lands along the extent of the State of California.

Twin Lakes State Beach General Plan

The Twin Lakes State Beach General Plan (State Parks 1988) recognizes the potential of Twin Lakes State Beach, near the terminus of Segment 9, to help meet California's recreation demands. The plan establishes goals to provide recreational opportunities for day use, protect cultural and natural resources, and provide educational elements throughout the park for both cultural and natural resources. It also identifies natural areas to rehabilitate that have been degraded through past land uses and disturbance. While intending to preserve and enhance natural resources and use of the beach, the plan also acknowledges that the beach's size and associated facilities are inadequate to serve demand. The Twin Lakes State Beach General Plan concludes with goals related to parking availability, vegetation and wildlife, aesthetic improvements, and visitor safety.

Regional

Association of Monterey Bay Area Governments Metropolitan Transportation Plan/Sustainable Communities Strategy

The Association of Monterey Bay Area Governments (AMBAG) is the metropolitan planning organization and council of governments for Santa Cruz, Monterey, and San Benito Counties. AMBAG performs metropolitan level transportation planning on behalf of the region and formulates land use and transportation measures that would support the region in achieving greenhouse gas emissions reduction targets as established by the California Air Resources Board. AMBAG works closely with local governments within its jurisdiction to ensure that land use patterns at the local level support regional transportation and land use goals. AMBAG's 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy addresses how the AMBAG region will meet its transportation needs for the period through 2045. Specifically, the Sustainable Communities Strategy details strategies for the AMBAG region to focus housing and job growth in existing urban areas, use infill development opportunities, and invest in expanded transit networks and active transportation options.

Monterey Bay Sanctuary Scenic Trail Network Final Master Plan

The MBSST Network Master Plan (RTC 2014) was developed to establish the design standards and course for a continuous recreational trail system along the Santa Cruz Branch Rail Line throughout Santa Cruz County. This trail would connect to the Monterey Bay Coastal Recreational Trail that spans the Monterey County coastline at the border of Santa Cruz and Monterey Counties along the

Pajaro River. At full buildout, the trail would span Santa Cruz and Monterey Counties, providing a continuous recreational trail along the entire Monterey Bay coastline.

Local

Santa Cruz County General Plan and Local Coastal Program

The County's General Plan and Local Coastal Program (LCP) provides a framework for development and growth in the County (Santa Cruz County 1994). The General Plan and LCP were adopted by the County Board of Supervisors on May 24, 1994, and were certified by the California Coastal Commission on December 15, 1994. The Santa Cruz County General Plan and LCP provide policies to manage growth in the County. The policies determine where growth should be focused in the County, and that public services grow with the population. Growth is also balanced with the protection of natural resources.

The County's General Plan includes elements required by the state by including Land Use, Circulation, Housing, Conservation and Open Space, Public Safety and Noise, Parks and Recreation, Public Facilities, and Community Design Elements (Santa Cruz County 1994). Because the County's General Plan was adopted prior to the 2017 requirement for an Environmental Justice Element, the County's General Plan does not include this element. Policies of the General Plan were analyzed for consistency with the Project, including those in the Conservation and Open Space, Land Use and Parks, Recreation, and Public Facilities Elements. These elements address the enhancement of public recreational opportunities in the Count and provide additional access to natural amenities, preserve natural resources, and provide natural resource educational opportunities to the public.

In the Land Use Element, General Plan land use designations define the physical uses and intensity of development for each land use designation. The Project corridor is within the Public Facilities County land use designation, and is surrounded by Public Facilities; Urban Low, Medium, and High Density Residential; Commercial Service; and Parks and Recreation land uses. County General Plan land use designations are shown on **Figures 3.9-1a** and **3.9-1b** located at the end of this section.

County of Santa Cruz Zoning Ordinance, Title 13

The County's Zoning Ordinance (Chapter 13.9) implements the policies of the County's General Plan and LCP by classifying and regulating the uses of land in the County. The County's Zoning Ordinance identifies specific zoning districts in the County and development standards that apply to each district. Zoning designations in and adjacent to the Project corridor are shown on **Figures 3.9-2a** and **3.9-2b** located at the end of this section.

The Project corridor itself is zoned as Public and Community Facilities. The Project corridor is immediately surrounded by Single Family Residential, Multi-Family Residential, Commercial Services, and Parks, Recreation, and Open Space zoning districts. These designations are defined below:

- **Single Family Residential:** Single-family residence, urban or rural. Maximum lot coverage of 40% and maximum height of 28 feet. Additional uses, including but not limited to accessory habitable structures, require a building permit s public noticing and/or public hearing by Zoning Administrator.
- **Multi-Family Residential:** Multiple-family residential, including appurtenant accessory uses and structures, urban. Some Multi-Family Residential zoning districts allow mobile homes.
- **Commercial Services:** Commercial service uses are intended primarily to be nonretail in nature, such as building material suppliers, auto repair, or freight terminals, and to be nonpolluting.

Commercial Services Districts are intended to be located in areas where the impact of noise, traffic, and other nuisances and hazards associated with such uses will not adversely affect other land uses.

- **Parks, Recreation, and Open Space:** Intended to preserve the County's undevelopable lands and public park lands as open space, to protect open space in the County by allowing commercial recreational uses that preserve open space by means of large acreage sites with low intensity uses that are compatible with the scenic values and natural setting of the County, and to preserve agriculture as an open space use.

City of Santa Cruz General Plan

The City's General Plan, adopted by Santa Cruz City Council in 2012, establishes guidelines for development and growth in the City. The City's General Plan expresses the desires of Santa Cruz residents about the City's future physical, social, economic, and environmental character, and plans for development within the City through eight topical chapters. State law provides that a General Plan consists of eight mandatory elements. The City has addressed state requirements by including Land Use, Community Design, Mobility, Civic and Community Facilities, Safety and Noise, Parks and Recreation, Natural Resources and Conservation chapters in its General Plan (City of Santa Cruz 2012). A new guideline adopted in 2017 now requires an eighth element, Environmental Justice. However, because the City's General Plan was adopted in 2012, it does not include this element.

The *Land Use* chapter of the City's General Plan establishes land use designations for the City, which define the physical uses and intensity of development for each land use designation. Along the Project corridor, City General Plan land use designations include Regional Visitor Commercial along Beach Street; Natural Areas as the alignment crosses the SLR; Low Medium Density Residential, Neighborhood Commercial, and Industrial along Murray Street; Coastal Dependent as the alignment crosses Santa Cruz Harbor; and Community Facilities, Community Commercial, and Medium Density Residential south of the harbor until Segment 9's southern terminus. City General Plan land use designations along the Project corridor are shown on **Figures 3.9-3a** through **3.9-3c** located at the end of this section.

Policies included in the *Land Use*; *Parks, Recreation, and Open Space*; and *Natural Resources and Conservation* chapters of the City's General Plan pertain to land planning and environmental effects. These policies include goals and strategies for community enhancement, land use compatibility, protection of natural resources, and the provision of parks and open space.

City of Santa Cruz Municipal Code

The City's Zoning Ordinance, established by Title 24 of the City's Municipal Code, implements the policies of the City's General Plan by classifying and regulating land uses within the City. While land use designations characterize the physical uses and the intensity of those uses, zoning designations legally define permitted uses and development standards. The City's Zoning Ordinance identifies specific zoning districts in the City and development standards that apply to each district. Zoning districts along the Project corridor include Beach Commercial along Beach Street until the SLR; Multiple Residence Low Rise south of the river along Murray Street; Neighborhood Commercial and General Industrial north of Santa Cruz Harbor; and Coastal Dependent as Segment 9 traverses the harbor. City zoning districts along the Project corridor are shown on **Figures 3.9-4a** and **3.9-4b** located at the end of this section. These designations are defined below:

- **Beach Commercial:** The purpose of this district is to establish standards for development of residential uses mixed with neighborhood commercial, motel, and regional tourist commercial use. These standards are designed both to improve existing uses and encourage new developments in a manner that maintains a harmonious balance between residential and regional commercial uses.
- **Multiple Residence Low Rise:** The purpose of this district is to promote the development of multi-family townhouses, condominiums, and apartments at a low to medium density of 10.1 to 27 units per acre, depending on unit mix; to stabilize and protect the residential characteristics of the district; and to promote and encourage a suitable environment for the lives of families and single persons.
- **Neighborhood Commercial:** The purpose of this district is to provide commercial and service uses near residential areas for the convenience of local residents. Uses aimed at nearby customers may not require typical development standards such as vehicular parking. Permitted uses include but are not limited to eating and drinking establishments (except for bars and fast food), professional offices, and one or two multiple-family units when located above the first floor commercial use with no additional parking required.
- **General Industrial:** The purpose of this district is to encourage sound industrial development by providing and protecting an environment for such development, subject to regulations necessary to ensure the purity of the land, air, and waters in the County, and the protection of nearby residential, commercial, and industrial uses of the land from hazards, noise, and other disturbances. Permitted uses include but are not limited to building materials and garden supply stores, food and beverage preparation, medical or laboratory facilities, professional offices, or storage warehousing.
- **Coastal Dependent:** The purpose of this district is to designate land in proximity of the coast for uses that rely upon a waterfront location and/or require access to coastal waters for the purpose of research or activities related to the Monterey Bay Marine Sanctuary, and which also protects resources by:
    - □ Implementing the goals of the City's LCP and the California Coastal Act, and serving as part of the Local Coastal Implementation Plan.
    - □ Preserving scenic vistas by permitting development with height, setbacks, and mass that will maintain the public enjoyment of waterfront views.
    - □ Giving highest priority and preference to uses and facilities dependent upon proximity to the water or the shorelands immediately adjacent to marine and tidal waters, or that relate to research of the Monterey Bay Sanctuary.

3.9.3 Methodology and Significance Thresholds

Methodology

Potential impacts related to land use and planning as a result of the Project were evaluated by comparing Project objectives and characteristics to existing plans and policies throughout the County, including General Plan and LCP land use and zoning designations, policies, and existing and proposed recreational plans in the City and the County. Mitigation measures required throughout this EIR for identified areas of potentially significant impacts were taken into consideration in the evaluation of consistency with applicable policies and plans.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*, which provides a sample Initial Study checklist that includes number of factual inquiries related to the subject of land use, and the other environmental topics. The letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For the purpose of this EIR, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would:

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.

3.9.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold A: Physically divide an established community.

Impact LUP-1 THE PROJECT WOULD NOT PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

As described in Section 2.6.1, *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, project construction would occur over approximately 24 months. Construction of Segment 8 would occur over approximately 3 months and would involve improvements to existing sidewalks, curb ramps, stairs, driveways, and bicycle lanes. Therefore, construction activities related to Segment 8 would be relatively minor and temporary. Construction equipment would potentially be staged in City

Parking Lot 18 near the Beach Street/Pacific Avenue roundabout or other disturbed or paved areas along the railroad right-of-way. The railroad right-of-way is an existing feature that is surrounded by developed communities, and construction activities within the railroad right-of-way would not physically divide communities along the Project corridor. Construction activities would not physically divide an established community along Segment 8, and impacts would be **less than significant**.

Construction of Segment 9 would occur over approximately 24 months, concurrent with construction of Segment 8. As described in detail in Section 2.6, *Project Construction*, construction activities for Segment 9 would generally include excavation of material sources, clearing and grubbing, and tree removal; grading, retaining wall construction, drainage improvements, and placement of crushed aggregate base and paved surface; and revegetation and installation of fencing, signs, and other trail- and safety-related features. Construction equipment would be staged in existing disturbed or paved areas along the railroad right-of-way, potentially including the Seabright Avenue/Watson Street Parking Lot, Eaton Street, the Simpkins Swim Center Parking Lot, or other parking lots or public properties near the trail corridor. There are no existing communities within the Project corridor and rail line right-of-way. Therefore, construction activities within the railroad right-of-way would not physically divide communities along the Project corridor. Construction activities would not physically divide an established community along Segment 9, and impacts would be **less than significant**.

Operation

The Project corridor extends from the Beach Street/Pacific Avenue roundabout within the City limits on the west, excluding the recently constructed SLR Trestle Bridge improvements, to the eastern side of 17th Avenue in the unincorporated Live Oak area of the County on the east. The Segment 8 trail would be within City right-of-way. The Segment 9 trail would be within the existing rail corridor and RTC right-of-way and would be located adjacent to existing single-family and multi-family residential areas, as well as other land uses described above and shown on **Figures 3.9-1** through **3.9-4**. The trail would extend through established communities via an existing transportation corridor; the proposed improvements within the corridor would increase connectivity and access to the coast by allowing formal community use of the corridor for transportation and recreation purposes. As such, the Project would not physically divide an established community and would have a beneficial effect of increasing connectivity within the community.

Segment 8 of the Project corridor would extend 0.6 mile along Beach Street, an established thoroughfare with sidewalks and bicycle lanes that connects the Santa Cruz Main Beach and visitor-serving uses with other coastal portions of the City. Segment 9 of the Project corridor would extend 1.6 miles from the SLR and continue along the inland side of the tracks along Murray Street, over the Santa Cruz Harbor, and then follow the existing rail corridor across 7th Avenue until Segment 9 terminates at 17th Avenue. Using the rail corridor would improve connectivity for pedestrians and cyclists to services along Beach Street because the Project would provide a pedestrian sidewalk and a bicycle cycle track using an existing corridor without disturbing existing residential, commercial, and industrial uses along the Project corridor. Overall, the Project would improve the community's connection by providing a trail in the City and RTC right-of-way and improve access between Beach Street, areas south of the SLR, and the unincorporated community of Live Oak.

As discussed in Section 2.5, *Project Operation and Maintenance*, it is estimated an average of 3,500 people could use the trail per day for transportation and recreation. Additionally, the trail would require intermittent maintenance, including but not limited to landscaping and vegetation management, pavement sealing and repair, trash and recycling disposal, and fence repair and

replacement. These trail use and maintenance activities would not result in the physical division of communities located along the trail corridor. Impacts would be **less than significant**.

In summary, this impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

As described in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, if this option is exercised, project construction is estimated to occur between 2025 and 2027. During implementation (Part 1), railroad tracks would be removed, and the Interim Trail would be constructed in generally the same location. As described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration),* construction and operation of the optional Interim Trail would not physically divide established communities located along the Project corridor because the Interim Trail would be located generally in the same alignment of Segment 9, and the Project would be located entirely within the existing RTC right-of-way. Therefore, this impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

For the purposes of analysis, it is estimated that the Interim Trail could be in operation for approximately 25 years, but it could be longer or shorter. Therefore, the Interim Trail would be demolished, and the railroad would be reconstructed (Part 2) around 2056 to 2060. Construction activities include removal of the Interim Trail, which would include demolishing and removing paving throughout the trail corridor, fiberglass panels, or asphalt at the Woods Lagoon Railroad Bridge crossing, retainer curbs, fencing, benches, and signage. Rebuilding the rail line would include construction of the rail ballast, installation of railroad ties and tracks, and construction of concrete panel railroad crossings, signals, and equipment. The rail line would be constructed generally in the existing corridor but may be realigned in some locations.

Although demolition and reconstruction of the railroad would involve additional construction activities compared to the *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, construction equipment would be similarly staged in previously disturbed areas within the rail right-of-way and other public properties along the Project corridor. As determined above for the *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, construction would not result in the physical division of existing communities along the Project corridor. Therefore, impacts related to demolition of the Interim Trail and rebuilding the rail line would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Constructing the Ultimate Trail Configuration as Part 3 of the optional first phase includes constructing the trail alongside the rail in the same location with the same features as the *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)* described and analyzed above. As discussed therein, construction and operation of the Ultimate Trail Configuration would not physically divide an established community. Therefore, this impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Altogether, the optional Interim Trail would involve additional demolition and construction, and full buildout would occur over several decades. However, as discussed above, each of these development stages would not result in the physical division of an established community as the Project corridor would be located entirely within the existing RTC right-of-way. The combined impact of Interim Trail Parts 1, 2, and 3 would be **less than significant**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would both be developed within the existing RTC rail corridor and right-of-way. Neither scenario would divide an established community, and both would increase connectivity within the community. Therefore, impacts of the Project, with and without the optional Interim Trail would be similar and would be **less than significant**. No mitigation would be required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. Construction and operation of the East Harbor Connection would connect Segment 9 and the Santa Cruz Harbor. It would not divide an established community and instead would result in the beneficial effect of improving connectivity within the existing community. Impacts would be similar as construction and operation of the East Harbor Connection would involve similar activities as the Project, which would occur entirely within the existing RTC right-of-way and accordingly would not result in the physical division of an existing community. Therefore, impacts would remain **less than significant**.

Threshold 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.

Impact LUP-2 THE PROJECT WOULD NOT CONFLICT WITH APPLICABLE LAND USE PLANS, POLICIES, OR REGULATIONS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

The goals and policies of the County's General Plan and LCP include goals for increased connectivity and the provision of additional recreational opportunities in the County while preserving public safety and natural resources. The Project would provide connectivity between existing recreation areas and ultimately throughout the County, support the goals to enhance recreational opportunities by improving access throughout the region, and include educational signage throughout the Project corridor. Project consistency with specific relevant policies and objectives (hereinafter referenced as policies) of the County's General Plan and LCP with the purpose of avoiding or mitigating an environmental effect is demonstrated in **Table 3.9-2**. As described therein, the Project would be consistent with 22 of the 23 relevant policies. Several of these consistency determinations are based on the impact analyses and mitigation measures presented in other sections of the EIR, which are referenced throughout **Table 3.9-2**. The Project would not be consistent with Policy 5.1.6, Development in Sensitive Habitats, because it would result in tree

removal that would be a significant disruption in sensitive habitat. Refer to Section 3.3, *Biological Resources*, for a full discussion of impacts associated with sensitive habitat. Because the Project would be consistent with most (22 of 23) of the applicable land use policies in the County General Plan and LCP and because the specific potential impacts and required mitigation measures are addressed in other sections throughout this EIR, this impact would be **less than significant**. No additional mitigation is required.

The goals and policies of the City's General Plan establish goals for community enhancement, land use compatibility, protection of natural resources, and the provision of parks and open space within the City. As described previously, the Project would provide connectivity in the City and as such would enhance the community, be compatible with existing land uses and long-term land use goals,; and enhance recreational opportunities by providing a recreational trail that increases connectivity to existing recreation areas, such as the Santa Cruz Beach Boardwalk, Santa Cruz Harbor, and Twin Lakes State Beach. Project consistency with specific relevant policies of the City's General Plan with the purpose of avoiding or mitigating an environmental effect is demonstrated below in **Table 3.9-3**. As described therein, the Project would be consistent with all eight relevant policies. Several of these consistency determinations are based on the impact analyses and mitigation measures presented in other sections of the EIR, which are referenced throughout **Table 3.9-3**. Because the Project would be consistent with all eight of the applicable land use policies in the City of Santa Cruz General Plan and because the specific potential impacts and required mitigation measures are addressed in other sections throughout this EIR, this impact would be **less than significant**. No additional mitigation is required.

The Project would also be consistent with the policies set forth in the Santa Cruz County Bicycle Plan and MBSST Network Master Plan because it supports development of safe bicycle routes and implements Segments 8 and 9 of the MBSST. The Project would provide an accessible bicycle/pedestrian path for active transportation, recreation, and nature education along the rail corridor, consistent with the MBSST Network Master Plan. The project objectives are based on and consistent with objectives and policies in the approved MBSST Network Master Plan. Additionally, the Project would be consistent with the goals of the Twin Lakes State Beach General Plan. The Twin Lakes State Beach General Plan establishes goals to provide recreational opportunities for day use, protect cultural and natural resources, and provide educational elements throughout the park for both cultural and natural resources. Because the Project would increase connectivity and improve access to the park and provide additional facilities near the beach, including public restrooms, benches, bike racks, and educational signage, the Project would be consistent with the Twin Lakes State Beach General Plan.

As discussed previously, the Project corridor within the City is zoned as Beach Commercial, Multiple Residence Low Density, Neighborhood Commercial, and General Industrial. Trails and recreational facilities are permitted in each of these zoning districts with applicable use permits, pursuant to Title 24 of the City's Municipal Code. Further, the Project corridor within the County is zoned as Public Facilities, which allows recreational facilities and accessory uses pursuant to the County's Municipal Code, Chapter 13.10. Accordingly, the Project would be consistent with the City's Municipal Code and County's Municipal Code.

In summary, the Project would be consistent with and support planning goals to enhance and establish safe alternative transportation and recreational opportunities throughout the City and County. The Project would be substantially consistent with applicable land use policies. Of the 31 specific policies reviewed in **Tables 3.9-2** and **3.9-3**, the Project would be consistent with all except County Policy 5.1.6, Development in Sensitive Habitats. Consistency with policies and ordinances

protecting biological resources, including trees, is addressed in Section 3.3 (Impact BIO-12). Several of these consistency determinations are based on the impact analyses and mitigation measures presented in other sections of the EIR, which are referenced throughout **Tables 3.9-2** and **3.9-3**. Implementing the mitigation measures to reduce impacts as a byproduct would result in overall consistency with applicable plans and policies discussed in this section. To avoid redundancy with the impact analyses and conclusions in other sections of this EIR, the analysis and conclusion for Impact LUP-2 focus on the overall resulting consistency.

Therefore, because the Project would be consistent with City and County goals to establish safe alternative transportation and recreational opportunities, because the Project would be consistent with most (30 of 31) of the applicable City and County land use policies, and because the specific potential impacts and required mitigation measures associated with these policies are fully addressed in other sections throughout this EIR, this impact would be **less than significant**. No additional mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementing the Interim Trail (part 1) would be subject to the same regional and local regulations and land use plans as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Therefore, as described above, the Interim Trail would be consistent with most of the applicable goals and policies in **Tables 3.9-2** and **3.9-3.** However, the Interim Trail (Part 1) would not be consistent with Policy 1.2.4 of the MBSST Network Master Plan, which intends to develop trails in a way that does not preclude future rail service along the rail corridor. Because the Interim Trail would be consistent with most City and County goals to establish safe alternative transportation and recreational opportunities, because the Interim Trail would be consistent with most of the applicable City and County land use policies, and because the specific potential impacts and required mitigation measures associated with these policies are fully addressed in other sections throughout this EIR, this impact would be **less than significant**.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and reconstruction of the rail line (optional Interim Trail Part 2) would involve additional demolition and construction activities. However, these activities would be similar to those of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and would comply with measures to avoid or minimize an environmental effect, including those established by the City's Municipal Code or the County's Municipal Code. Reconstruction of the rail line (Interim Trail Part 2) would restore Project consistency with Policy 1.2.4 of the MBSST Network Master Plan. Demolition of the trail and reconstruction of the rail line would result in potential impacts and required mitigation measures detailed throughout this EIR, which as a byproduct, would result in consistency with most applicable plans and policies. Therefore, Part 2 of the Interim Trail would be consistent with most applicable goals and policies of the City's General Plan or County's General Plan and LCP with the purpose of avoiding or mitigating an environmental effect. Impacts would be **less than significant**.

Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis

Santa Cruz County General Plan Policy	Consistency Discussion
Air Quality	
Policy 5.18.1. New Development. Ensure new development projects are consistent at a minimum with the Monterey Bay Unified Air Pollution Control District Air Quality Management Plan and review such projects for potential impact on air quality.	**Consistent.** The Project has been reviewed for consistency with the Monterey Bay Unified Air Pollution Control District (now known as the Monterey Bay Air Resources District) Air Quality Management Plan to determine the potential for impacts on air quality, as discussed in Section 3.2, *Air Quality*. Implementation of the Project would not result in permanent increases in air emissions. Typical construction equipment would be utilized through either development option, and standard best management practices (BMPs), including but not limited to limiting grading activities during high winds, watering construction areas, covering inactive storage piles, installing perimeter protection, and implementing measures from the Soil Management Plan to be prepared by the County, would be implemented throughout construction. These emissions have been accounted for in the Air Quality Management Plan and would not significantly impact air quality. Therefore, implementation of the Project would be consistent.
Policy 5.18.3. Air Quality Mitigation. Require land use projects generating high levels of pollutants (i.e., manufacturing facilities, hazardous waste handling operations) to incorporate air quality mitigations in their design.	**Consistent.** The Project is a trail and would not generate high levels of pollutants like a manufacturing facility or hazardous waste handling operation might. As discussed in Section 3.2, *Air Quality*, the Project would generate temporary construction-related emissions but would not result in permanent increases in air emissions. Implementation of BMPs, including limiting grading activities during high winds, watering construction areas, covering inactive storage piles, installing perimeter protection, and implementing measures from the Soil Management Plan to be prepared by the County, would reduce potential impacts to a less than significant level. Therefore, the Project would be consistent with this policy.
Objective 3.1. Vehicle Miles. To limit the increase in Vehicle Miles Traveled (VMT) to achieve as a minimum, compliance with the current Air Quality Management Plan.	**Consistent.** As described in Section 3.12, *Transportation,* the Project would not conflict with or be inconsistent with guidance related to VMT established by the Office of Planning and Research, California Department of Transportation, and the County. Overall, the Project would result in a decrease in VMT by increasing active transportation opportunities and connectivity in the region. Further, as discussed in Section 3.2, *Air Quality,* the Project would be consistent with the Monterey Bay Air Resources District Air Quality Management Plan. Therefore, the Project would be consistent with this policy.
Biological Resources	
Policy 5.1.6. Development in Sensitive Habitats. Sensitive Habitats shall be protected against a significant disruption of habitat values; and any proposed development within or adjacent to these areas must maintain or enhance functional capacity of the habitat. Reduce in scale, redesign, or if no other alternative exists, deny any project which cannot sufficiently mitigate significant adverse impacts on sensitive habitats unless approval of project is legally necessary to allow a reasonable use of the land.	**Inconsistent.** As discussed in Section 3.3, *Biological Resources,* the Project corridor extends through sensitive habitat, and Project development requires tree removal that would disrupt habitat values. Therefore, the Project would be consistent with this policy.

Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis

Santa Cruz County General Plan Policy	Consistency Discussion
Policy 5.1.8. Chemicals Within Sensitive Habitats. Prohibit the use of insecticides, herbicides, or any toxic chemical substances in sensitive habitats, except when an emergency has been declared, when the habitat itself is threatened, when a substantial risk to public health and safety exists, including maintenance for flood control by Public Works, or when such use is authorized pursuant to a permit issued by the Agricultural Commissioner.	**Consistent.** No proposed toxic chemical applications are planned for the trail corridor or adjacent land uses. Prior to the onset of construction activities, the County would be required to prepare an erosion control plan and would prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the state Stormwater National Pollutant Discharge Elimination System (NPDES), which would include the implementation of BMPs to ensure toxic substances that may be related to construction activities would not enter sensitive environments adjacent to the trail corridor, as discussed in Section 3.8, *Hydrology and Water Quality*. Therefore, the Project would be consistent with this policy.
Policy 5.1.9. Biotic Assessments. Within the following areas, require a biotic assessment as part of normal project review to determine whether a full biotic report should be prepared by a qualified biologist: (a) Areas of biotic concern, mapped (b) Sensitive habitats, mapped and unmapped	**Consistent.** A Natural Environment Study was prepared for the Project, which includes the evaluation of adjacent land uses and sensitive environments. These are described in Section 3.3, *Biological Resources.* Because a biotic assessment was prepared for the Project, the Project is consistent with this policy.
Policy 5.2.3. Activities Within Riparian Corridors and Wetlands. Development activities, land alteration and vegetation disturbance within riparian corridors and wetlands and required buffers shall be prohibited unless an exception is granted per the Riparian Corridor and Wetlands Protection ordinance. As a condition of riparian exception, require evidence of approval for development from the U.S. Army Corps of Engineers, California Department of Fish and Game, and other federal or state agencies that may have regulatory authority over activities within riparian corridors and wetlands.	**Consistent.** As described in Section 3.3, *Biological Resources,* the Project corridor includes wetlands and riparian vegetation. Therefore, an exception is required per the County's Riparian Corridor and Wetlands Protection. There is an existing drainage within the Project corridor at the west end of Segment 9 that would be improved to function as a vegetated swale. Further, the County would obtain permits from the U.S. Army Corps of Engineers, California Department of Fish and Wildlife (formally California Department of Fish and Game), and Central Coast Regional Water Quality Control Board prior to the construction of the Project. The County have also coordinated with the Coastal Commission to determine Environmentally Sensitive Habitat Areas along the trail corridors. Therefore, the Project would be consistent with this policy.
Policy 5.2.7. Compatible Uses With Riparian Corridors. Allow compatible uses in and adjacent to riparian corridors that do not impair or degrade the riparian plant and animal systems, or water supply values, such as non-motorized recreation and pedestrian trails, parks, interpretive facilities and fishing facilities. Allow development in these areas only in conjunction with approval of a riparian exception.	**Consistent.** As stated above, the Project would extend through a riparian corridor. Implementation of the Project would result in the addition of a non-motorized recreational and pedestrian trail with an educational program that includes signs that provide information on sensitive habitats located along the trail corridor. Therefore, the Project would be consistent with this policy. Refer to Policy 5.1.6, Development in Sensitive Habitats, for issues related to trail construction and tree removal.
Policy 5.2.10. Development in Wetland Drainage Basins. Require development projects in wetlands basins to include drainage facilities or Best Management Practices (BMPs) which will maintain surface runoff patterns and water quality, unless a wetland	**Consistent.** The Project corridor is not located within a wetland drainage basin. Further, prior to the onset of construction activities, the County would prepare an erosion control plan, would prepare a SWPPP in accordance with the state Stormwater NPDES, and would implement BMPs to ensure that runoff and erosion that may be related to construction activities would not enter sensitive

Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis

Santa Cruz County General Plan Policy	Consistency Discussion
management plan specifies otherwise, and minimize erosion, sedimentation, and introduction of pollutants.	environments adjacent to the trail corridor, resulting in the addition of toxic materials or sedimentation to wetlands, as discussed in Sections 3.3, *Biological Resources*, and 3.8, *Hydrology and Water Quality*. Therefore, the Project would be consistent with this policy.
Cultural Resources	
Policy 5.19.1. Evaluation of Native American Cultural Sites. Protect all archaeological resources until they can be evaluated. Prohibit any disturbance of Native American Cultural Sites without an appropriate permit. Maintain the Native American Cultural Sites ordinance.	**Consistent.** Previously identified cultural resources have been identified, and the area has been surveyed by qualified archaeologists. The rail line has been identified as a historical resource, and mitigation has been established that would involve historical interpretive exhibits for the Santa Cruz Branch Railroad. This would ensure that existing recorded resources are protected, and the unexpected discovery of previously unknown resources were properly handled and recorded, in accordance with Chapter 16.40 of the County's Municipal Code, as further discussed in Section 3.4, *Cultural Resources*. Therefore, implementation of the Project would be consistent with this policy.
Policy 5.19.2. Site Surveys. Require an archaeological site survey (surface reconnaissance) as part of the environmental review process for all projects with very high site potential as determined by the inventory of archaeological sites, within the Archaeological Sensitive Areas, as designated on General Plan and LCP Resources and Constraint Maps files in the Planning Department.	**Consistent.** A qualified archaeologist has surveyed the Project corridor for cultural resources. The findings of this study are detailed in Section 3.4, *Cultural Resources*. Therefore, the Project would be consistent with this policy.
Policy 5.19.3. Development Around Archaeological Resources. Protect archaeological resources from development by restricting improvements and grading activities to portions of the property not containing these resources, where feasible, or by preservation of the site through project design and/or use restrictions, such as covering the site with earthfill to a depth that ensures the site will not be disturbed by development, as determined by a professional archaeologist.	**Consistent.** Previously identified cultural have been identified, and the area has been surveyed by qualified archaeologists. The rail line has been identified as a historical resource, and mitigation has been established that would involve historical interpretive exhibits for the Santa Cruz Branch Railroad. This would ensure that existing recorded resources are protected, and the unexpected discovery of previously unknown resources were properly handled and recorded, in accordance with Chapter 16.40 of the County's Municipal Code, as further discussed in Section 3.4, *Cultural Resources*. Therefore, implementation of the Project would be consistent with this policy.
Policy 5.19.4. Archaeological Evaluations. Require the applicant for development proposals on any archaeological site to provide an evaluation, by a certified archaeologist, of the significance of the resource and what protective measures are necessary to achieve General Plan and LCP Land Use Plan objectives and policies.	**Consistent.** An Archaeological Survey Report has been undertaken by a qualified archaeologist for the Project. Previously identified cultural and Native American resources have been identified, and the area has been surveyed by qualified archaeologists. The rail line has been identified as a historical resource, and mitigation has been established that would involve historical interpretive exhibits for the Santa Cruz Branch Railroad. This would ensure that existing recorded resources are protected, and the unexpected discovery of previously unknown resources were properly handled and recorded, in accordance with Chapter 16.40 of the County's Municipal Code, as further discussed in Section 3.4, *Cultural Resources*. Therefore, implementation of the Project would be consistent with this policy.

Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis

Santa Cruz County General Plan Policy	Consistency Discussion
Policy 5.19.5. Native American Cultural Sites. Prohibit any disturbance of Native American Cultural Sites without an archaeological permit which requires, but is not limited to, the following: (a) A statement of the goals, methods, and techniques to be employed in the excavation and analysis of the data, and the reasons why the excavation will be of value; (b) A plan to ensure that artifacts and records will be properly preserved for scholarly research and public education; (c) A plan for disposing of human remains in a manner satisfactory to local Native America Indian groups.	**Consistent.** An Archaeological Survey Report has been prepared by a qualified archaeologist for the Project. Previously identified cultural and Native American resources have been identified, and the area has been surveyed by qualified archaeologists. The rail line has been identified as a historical resource, and mitigation has been established that would involve historical interpretive exhibits for the Santa Cruz Branch Railroad. This would ensure that existing recorded resources are protected, and the unexpected discovery of previously unknown resources were properly handled and recorded, in accordance with Chapter 16.40 of the County's Municipal Code, as further discussed in Section 3.4, *Cultural Resources*. Therefore, implementation of the Project would be consistent with this policy.
Energy	
Policy 5.17.1. Promote Alternative Energy Sources. Promote the use of energy sources which are renewable, recyclable and less environmentally degrading than non-renewable fossil fuels.	**Consistent.** As discussed in Section 3.15.3, *Energy*, energy would be consumed as necessary during project construction but would not be wasteful or inefficient. Following construction, operation of the trail would include minimal new lighting, which would be solar-powered where feasible, as stated in Chapter 2, *Project Description*. Otherwise, operation of the Project would not require the use of energy sources. Therefore, the Project would be consistent with this policy.
Geology and Soils	
Policy 5.9.1. Protection and Designation of Significant Resources. Protect significant geological features such as caves, large rock outcrops, inland cliffs and special formations of scenic or scientific value, hydrological features such as major waterfalls or springs, and paleontological features, through the environmental review process. Designate such sites on the General Plan and LCP Resources and Constraints Maps where identified.	**Consistent.** The Project would not be located near currently identified hydrological, geological, or paleontological features. Further, compliance with existing regulations regarding hydrological, geological, and paleontological resources, and implementation of mitigation measures pertaining to these resources would ensure that the Project would not result in significant impacts to such resources. For a full discussion on hydrological, geological, and paleontological resources and the mitigation measures contained therein, refer to Section 3.5, *Geology and Soils*, and Section 3.8, *Hydrology and Water Quality.* Therefore, the Project would be consistent with this policy.
Hydrology and Water Quality	
Policy 6.3.4. Erosion Control Plan Approval Required for Development. Require approval of an erosion control plan for all development, as specified in the Erosion Control ordinance. Vegetation removal shall be minimized and limited to that amount indicated on the approved development plans, but shall be consistent with fire safety requirements.	**Consistent.** Prior to the onset of construction activities, the County would be required to prepare an erosion control plan and would prepare a SWPPP in accordance with the state Stormwater NPDES, which would include the implementation of BMPs to ensure toxic substances that may be related to construction activities would not enter sensitive environments adjacent to the trail corridor, as discussed in Section 3.8, *Hydrology and Water Quality*. Therefore, the Project would be consistent with this policy.

Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis

Santa Cruz County General Plan Policy	Consistency Discussion
Policy 6.3.5. Installation of Erosion Control Measures. Require the installation of erosion control measures consistent with the Erosion Control ordinance, by October 15, or the advent of significant rain, or project completion, whichever occurs first. Prior to October 15, require adequate erosion control to be provided to prevent erosion from early storms. For development activities, require protection of exposed soil from erosion between October 15 and April 15 and require vegetation and stabilization of disturbed areas prior to completion of the project. For agricultural activities, require that adequate measures are taken to prevent excessive sediment from leaving the property.	**Consistent.** Prior to the onset of construction activities, the County would be required to prepare an erosion control plan and would prepare a SWPPP in accordance with the state Stormwater NPDES, which would include the implementation of BMPs to avoid and minimize erosion to the extent feasible within the trail corridor, as discussed in Section 3.8, *Hydrology and Water Quality*. Furthermore, the Project would comply with the County's Grading Ordinance as applicable. Section 16.20.070 of the County's Municipal Code prohibits grading in the County during the winter season (October 15 through April 15). Therefore, the Project would be consistent with this policy.
Greenhouse Gas Emissions	
Policy 5.18.9. Greenhouse Gas Reduction. Implement state and federal legislation promoting the national goal of 35 percent reduction of carbon dioxide and other greenhouse gases by 2000.	**Not Applicable.** Since the target year for this goal has passed, this policy is not applicable to the Project. However, as discussed fully in Section 3.6, *Greenhouse Gas Emissions/Climate Change,* the Project would be consistent with current state, regional, and local greenhouse gas emissions reduction targets, including those established by the California Air Resources Board 2017 Scoping Plan, and the County's Climate Action Strategy.
Hazards and Hazardous Materials	
Objective 6.6. Hazardous and Toxic Materials. To eliminate, to the greatest degree possible, the use of hazardous and toxic materials, and where it is not feasible completely to eliminate the use of such materials, then to minimize the reduction in the use of such materials, so as to ensure that such materials will not contaminate any portion of the County's environment, including the land, water, and air resources of the County.	**Consistent.** As discussed fully in Section 3.7, *Hazards and Hazardous Materials,* small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used along the Project corridor and transported to and from the site during construction. However, the Project contractor would be required to comply with California Health and Safety Code, Chapter 6.95, which would ensure that risks from routine use, transport, handling, storage, disposal, and release of hazardous materials would be minimized. Compliance with existing regulations and implementation of mitigation measures would ensure that impacts related to hazardous materials are avoided and minimized to the extent feasible. Therefore, the Project would be consistent with this policy.
Noise	
6.9.6 Vibration from Rail. Evaluate vibrations from rail activities for future development within 200 feet of the railroad tracks as part of environmental review.	**Consistent.** The Project corridor is not currently in use, except Segment 8 is being used by Roaring Camp seasonally (twice daily during summer). Implementation of the Project would construct the multi-use trail within 200 feet of the existing railroad line, the majority of which would be located in developed areas of the County. Although recreators would experience some vibration when using the trail if a train passed through the corridor, the effects would be temporary and sporadic; it would not

Table 3.9-2 Santa Cruz County General Plan Policy Consistency Analysis

Santa Cruz County General Plan Policy	Consistency Discussion
	be expected that vibration from the trail would significantly impact or deter trail users. Implementation of the Interim Trail would involve removing the railroad and replacing the tracks with a multi-use trail; therefore, vibration would not impact the Interim Trail while it is in operation. Therefore, Project implementation would be consistent with this policy. Refer to Section 3.10, *Noise*, for a full discussion on Project vibration impacts.
6.9.7 Construction Noise. Require mitigation on construction noise as a condition of future project approach.	**Consistent.** The Project would not result in significant impacts related to construction noise, as detailed in Section 3.10, *Noise*. As stated in Section 2.6, *Project Construction*, construction would occur between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday. Additionally, construction could also start at 7:00 a.m., Monday through Friday, or occur on Saturdays or Sundays with written approval from the County. There would be no construction on national holidays. Emergencies may require work outside these hours. This would minimize construction impacts on adjacent land uses, and noise reducing measures would be implemented on construction equipment when used within 150 feet of residences. Therefore, implementation of the Project would be consistent.

Table 3.9-3 City of Santa Cruz General Plan Policy Consistency Analysis

City of Santa Cruz General Plan Policy	Consistency Discussion
LCP Policy 2.31. Design and site development to minimize lot coverage and impervious surfaces, to limit post-development runoff to predevelopment volumes, and to incorporate storm drainage facilities that reduce urban runoff pollutants to the maximum extent possible.	**Consistent.** As discussed in **Table 3.9-2** and fully discussed in Section 3.8, *Hydrology and Water Quality,* the trail would result in new impervious surfaces within the rail corridor, but it would be designed to include drainage facilities that reduce urban runoff pollutants to the maximum extent possible and that would not substantially alter drainage patterns. Therefore, the Project would be consistent with this policy.
LCP Policy 3.1.2. Prohibit grading and earth disturbance during wet winter months and ensure that any grading or stockpiles are stabilized and revegetated (or covered) before winter months.	**Consistent.** The Project would comply with the City's Grading Ordinances as applicable. Section 18.45.040 of the City's Municipal Code prohibits grading in the City during the rainy season (October 15 through April 1) unless approved by the City. Additionally, implementation of BMPs, including but not limited to limiting grading activities during high winds, watering construction areas, covering inactive storage piles, installing perimeter protection, and implementing measures from the Soil Management Plan to be prepared by the City, would further ensure Project consistency with this policy. Therefore, the Project would be consistent with this policy.
LCP Policy 1.2.2. Evaluate the extent of onsite archaeological and paleontological resources through archival research, site surveys, and necessary supplemental testing as part of the initial environmental assessment on each potentially significant site.	**Consistent.** As discussed in Section 3.4, *Cultural Resources,* to determine potential impacts to archaeological and paleontological resources, a California Historical Resources Information System records search and a Native American Heritage Commission Sacred Lands File search were conducted, in addition to a review of historical aerial imagery and topographic maps, a pedestrian field survey, and the evaluation of one built environment resource located within the Project corridor. Native American tribal consultation was also completed pursuant to Assembly Bill 52. Previously identified cultural have been identified, and the area has been surveyed by qualified archaeologists. Cultural resources have been identified and mitigation has been established that would involve historical interpretive exhibits for the Santa Cruz Branch Railroad. This would ensure that existing recorded resources are protected, and the unexpected discovery of previously unknown resources were properly handled and recorded, in accordance with Section 24.12.410 of the City's Municipal Code, as further discussed in Section 3.4, *Cultural Resources*. Further, as discussed in Section 3.5, *Geology and Soils,* existing information in scientific literation regarding known fossils within geologic units was evaluated for the Project corridor and a paleontological sensitivity classification was assigned to each geologic unit mapped within the Project corridor. As stated in Section 3.5, *Geology and Soils*, the Project would require implementation of Mitigation Measure GEO-5, which includes paleontological resources monitoring and mitigation. Therefore, the Project would be consistent with this policy.
Policy LU-1.2. Ensure that growth and development do not lead to the overdraft of any water source, the creation of unacceptable levels of air pollution, or the loss of prime agricultural land.	**Consistent.** The Project is not growth and development that could lead to overdraft of any water resource. As discussed in Section 3.8, *Hydrology and Water Quality,* implementation of the Project would not interfere with sustainable groundwater management. As discussed in Section 3.2, *Air Quality,* the Project would not result in significant air pollutant emissions during construction or operation. Finally, as discussed in Section 3.15, *Effects Found to be Less than Significant,* the Project corridor would not be located near agricultural lands and would not result in the loss of Farmland. Therefore, the Project would be consistent with this policy.

Table 3.9-3 City of Santa Cruz General Plan Policy Consistency Analysis

City of Santa Cruz General Plan Policy	Consistency Discussion
Policy CC5.1.8. Require new development to maintain predevelopment runoff levels.	**Consistent.** The Project would comply with Chapter 16.19 of the City's Municipal Code, which would require that the Project does not result in runoff that exceeds predevelopment levels. Therefore, the Project would be consistent with this policy.
Policy HZ2.2.1. Require future development projects to implement applicable Monterey Bay Unified Air Pollution Control District control measures and/or air quality mitigations in the design of new projects as set forth in the District's "CEQA Guidelines."	**Consistent.** As discussed in Section 3.2, *Air Quality,* the Project would be consistent with the Monterey Bay Air Resources District (formerly the Monterey Bay Unified Air Pollution Control District) Air Quality Management Plan and would comply with applicable control measures established in its *CEQA Guidelines*. Therefore, the Project would be consistent with this policy.
Policy HZ3.1.1. Require land uses to operate at noise levels that do not significantly increase surrounding ambient noise.	**Consistent.** The Project would not result in significant impacts related to construction noise, as detailed in Section 3.10, *Noise*. Construction hours would be limited to between 8:00 a.m. and 7:00 p.m. on weekdays and 9:00 a.m. and 4:00 p.m. on Saturday or Sundays to minimize construction impacts on adjacent land uses, and noise reducing measures would be implemented on construction equipment when used within 150 feet of residences. In operation, the Project corridor would extend through existing developed areas of the City and would not result in a substantial increase in noise levels compared to existing conditions. Further, the normal operating hours would be dawn to dusk, with public "pass through" at all times to allow for early morning and evening commuting and transportation use. Thus, the trail is anticipated to result in minimal additional sources of noise during those hours. Therefore, implementation of the Project would be consistent with this policy.
Policy NRC2.2.1. As part of the CEQA review process for development projects, evaluate and mitigate potential impacts to sensitive habitat (including special-status species) for sites located within or adjacent to these areas.	**Consistent.** As discussed in Section 3.3, *Biological Resources,* a Natural Environment Study has been prepared for the Project, which includes the evaluation of adjacent land uses and sensitive environments. As discussed therein, mitigation has been identified to reduce potential impacts to sensitive habitat or special-status species to the extent feasible. Therefore, the Project would be consistent with this policy.

3) Construction of the Ultimate Trail Configuration

This third part of the optional first phase includes constructing the trail alongside the rail in the same location with the same features as the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* described and analyzed above. As discussed, the Ultimate Trail Configuration would be consistent with most applicable goals and policies of the City's General Plan or County's General Plan and LCP with the purpose of avoiding or mitigating an environmental effect. The inconsistency with County General Plan Policy 5.1.6, Development in Sensitive Habitats, is fully addressed in Section 3.3. Therefore, because the Ultimate Trail Configuration would be consistent with City and County goals to establish safe alternative transportation and recreational opportunities, because it would be consistent with most (30 of 31) of the applicable City and County land use policies, and because the specific potential impacts and required mitigation measures associated with these policies are fully addressed in other sections throughout this EIR, this impact would be **less than significant**.

Combined Effect of Interim Trail Parts 1, 2, 3

Altogether, the Interim Trail would involve additional demolition and construction, and full buildout would occur over a longer period of time compared to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. However, as discussed above, each of these project stages would be consistent with most of the goals and policies of the City's General Plan or the County's General Plan and LCP. Therefore, the combined impact of Interim Trail Parts 1, 2, and 3 would be **less than significant**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would be consistent with most applicable land use goals and policies. Under either scenario, the Ultimate Trail Configuration would be inconsistent with County Policy 5.1.6, Development in Sensitive Habitats. The Interim Trail (Part 1) would have additional inconsistency with Policy 1.2.4 of the MBSST Network Master Plan, which intends to develop trails in a way that does not preclude future rail services along the rail corridor, but would be consistent once the rail is rebuilt (Part 2). Overall, for reasons described in the above discussions, the impacts would be **less than significant**.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be consistent with most of the applicable goals and policies described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Like the Ultimate Trail Configuration, it would be inconsistent with County Policy 5.1.6, Development in Sensitive Habitats, because it would require removal of approximately 15 additional trees, located near a known bird rookery. Refer to Section 3.3 for a full discussion of the potential impact. For purposes of the discussion of Impact LUP-2 in this section, the East Harbor Connection would be consistent with most of the applicable goals and policies. Therefore, this impact would be **less than significant**.

3.9.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
LUP-1. The Project would not physically divide an established community.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
LUP-2. The Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	LTS Similar, more	LTS Similar	LTS Substantially similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

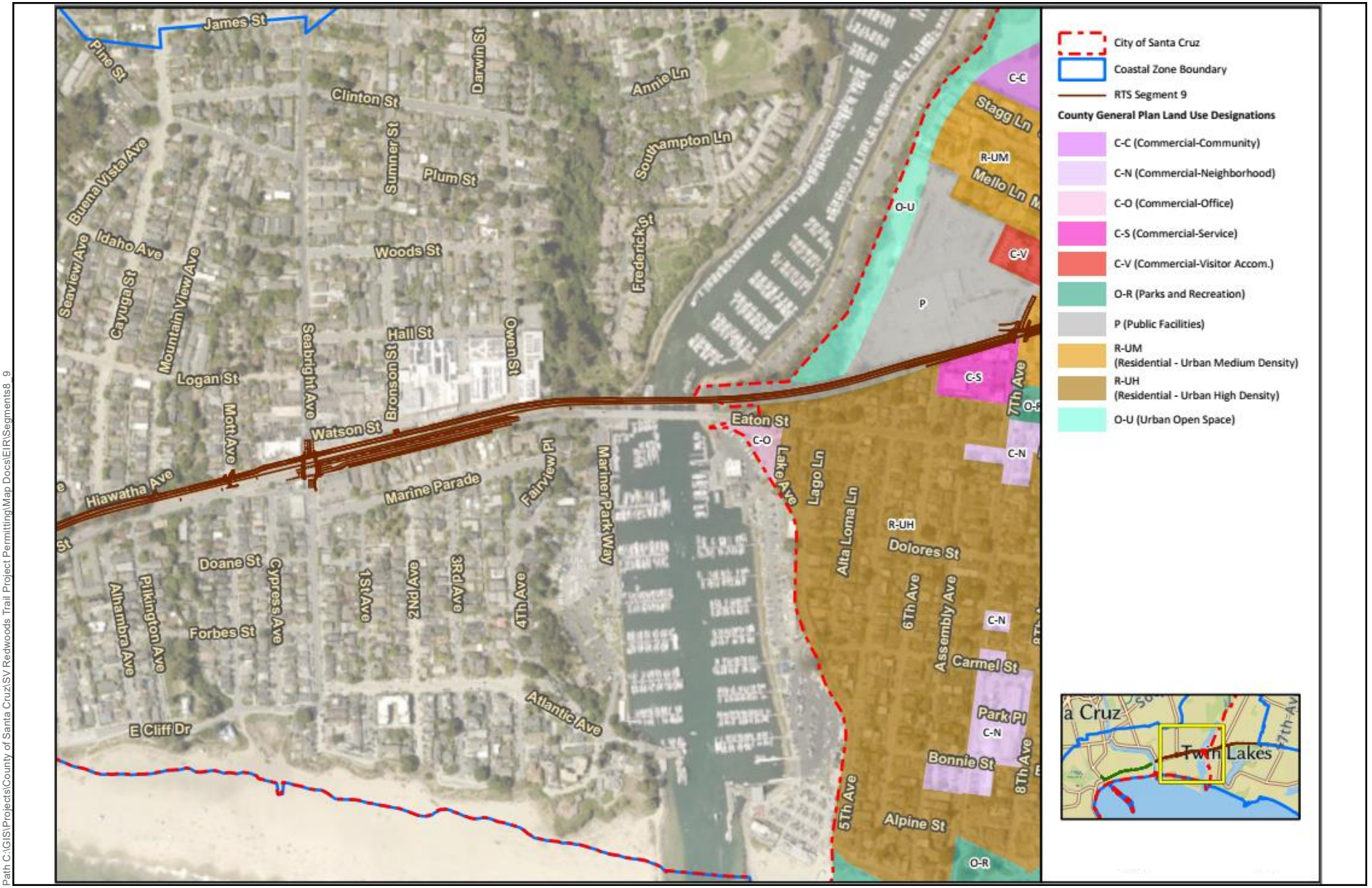
NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

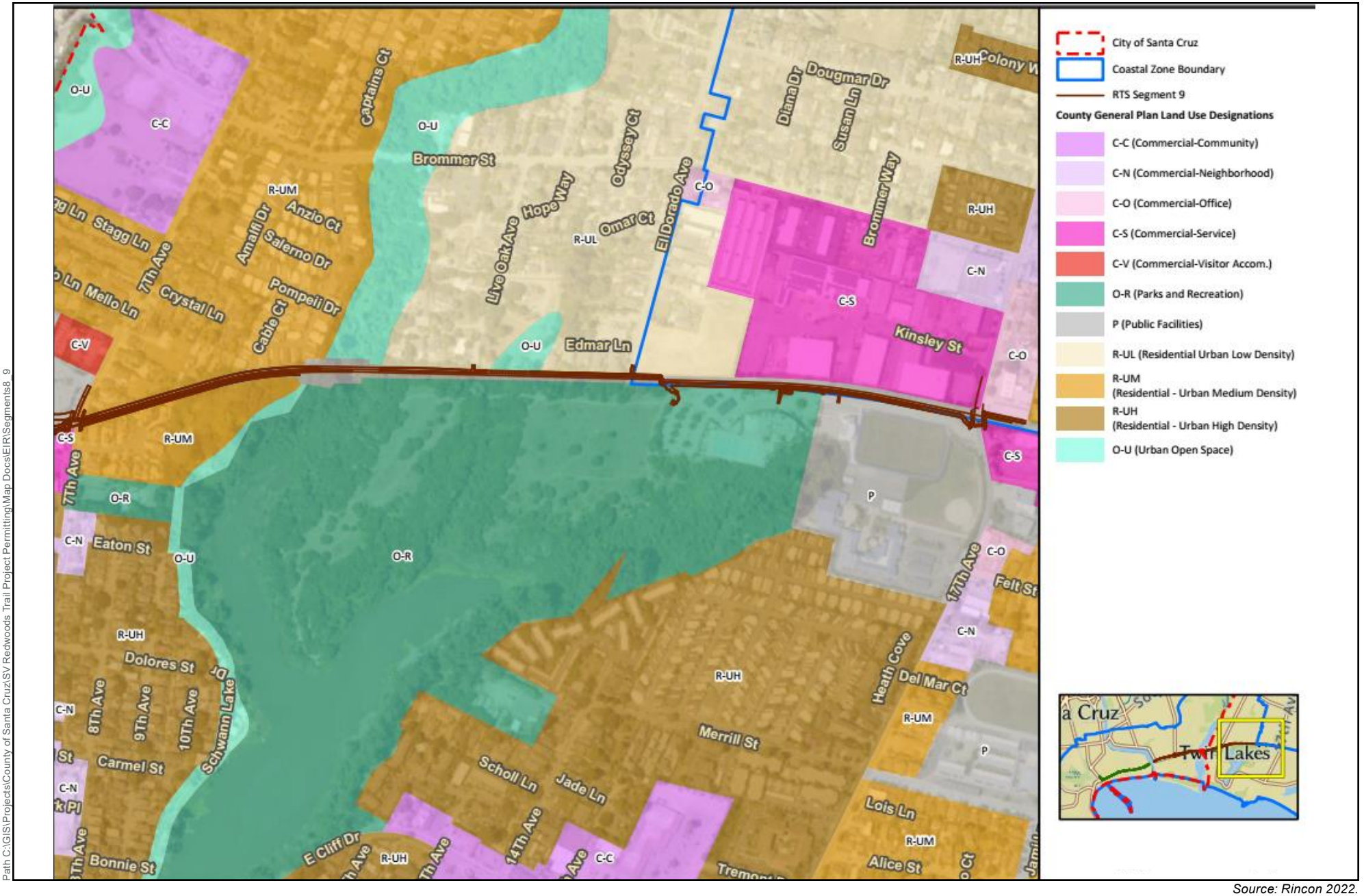
N

0 250 500

Feet

Figure 3.9-1a

County of Santa Cruz General Plan Land Use Designations - Segment 9 (Western Portion)



Source: Rincon 2022.

Harris & Associates

N

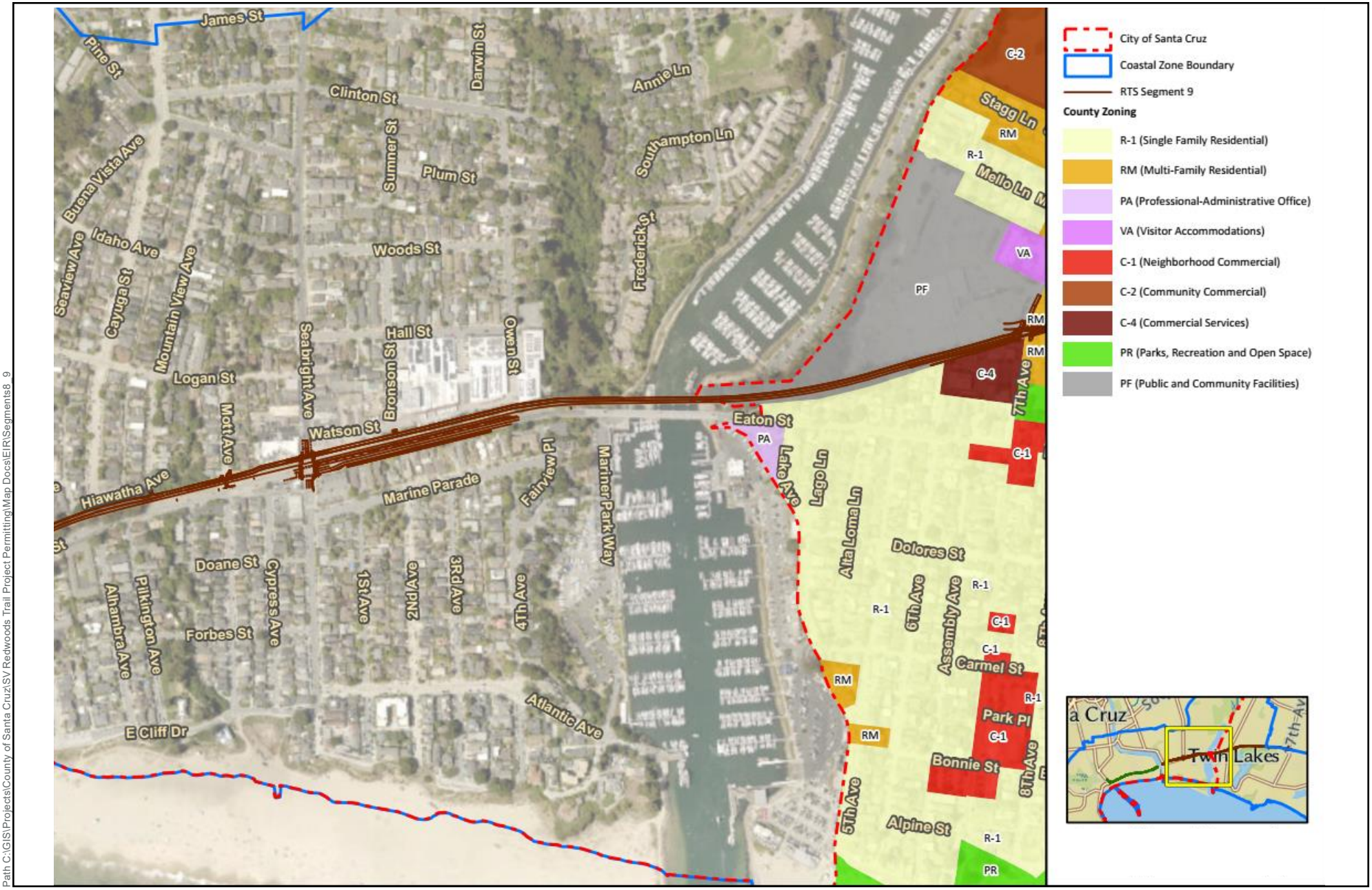
0 250 500

Feet

Figure 3.9-1b

County of Santa Cruz General Plan Land Use Designations - Segment 9 (Eastern Portion)

Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

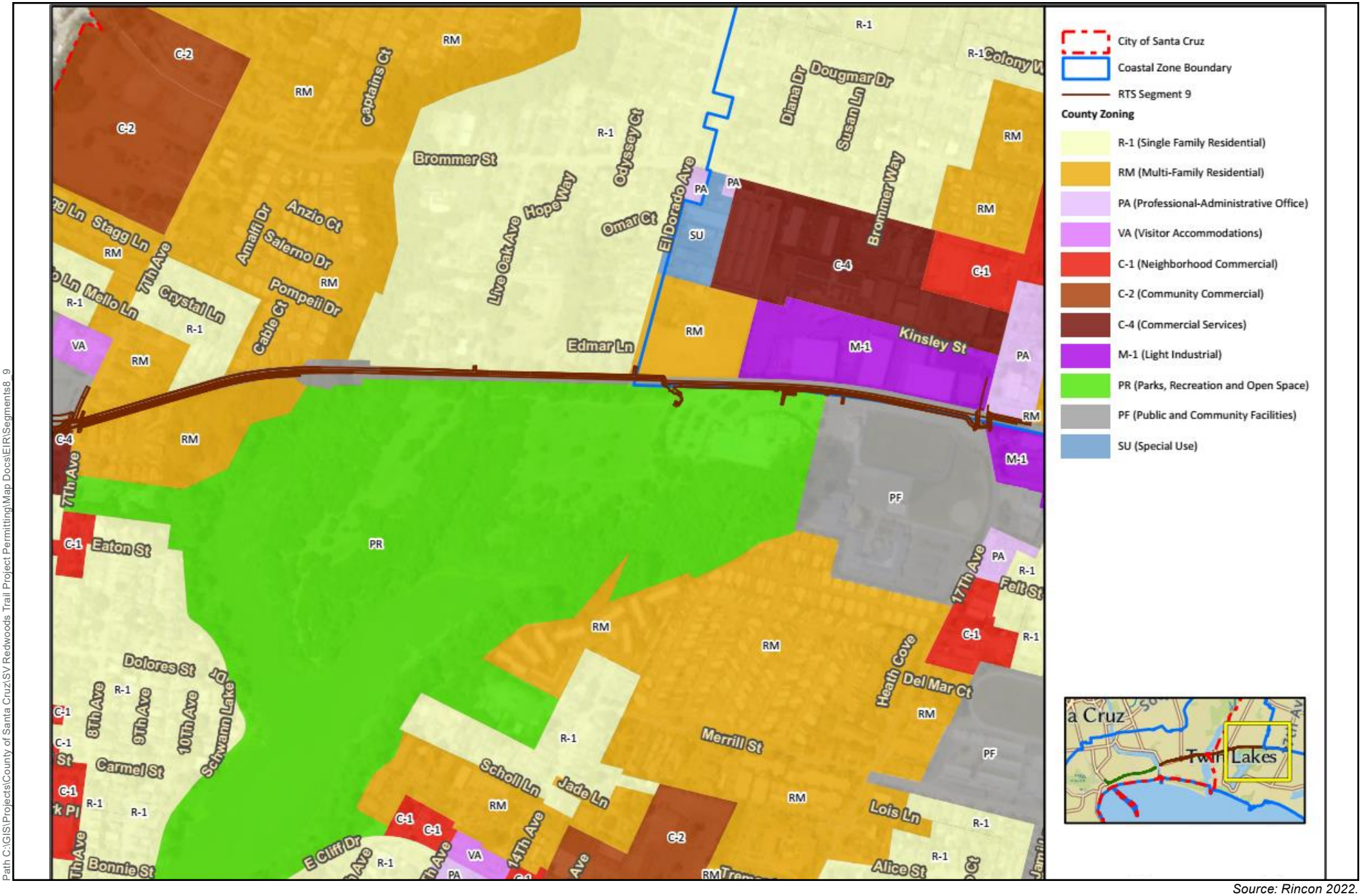
N

0 250 500

Feet

Figure 3.9-2a

County of Santa Cruz Zoning Districts - Segment 9 (Western Portion)



Source: Rincon 2022.

Harris & Associates

N

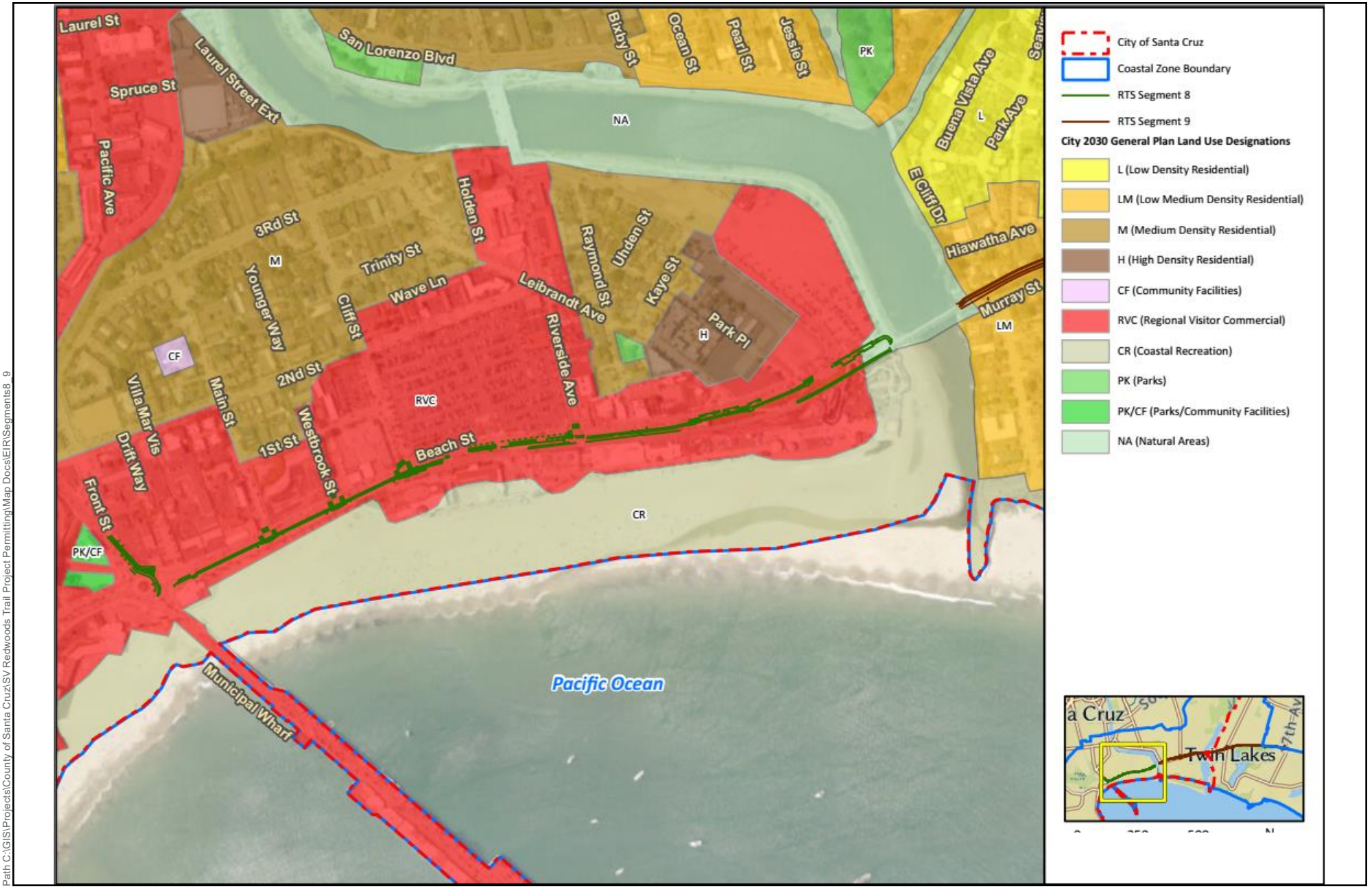
0 250 500

Feet

Figure 3.9-2b

County of Santa Cruz Zoning Districts - Segment 9 (Eastern Portion)

Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

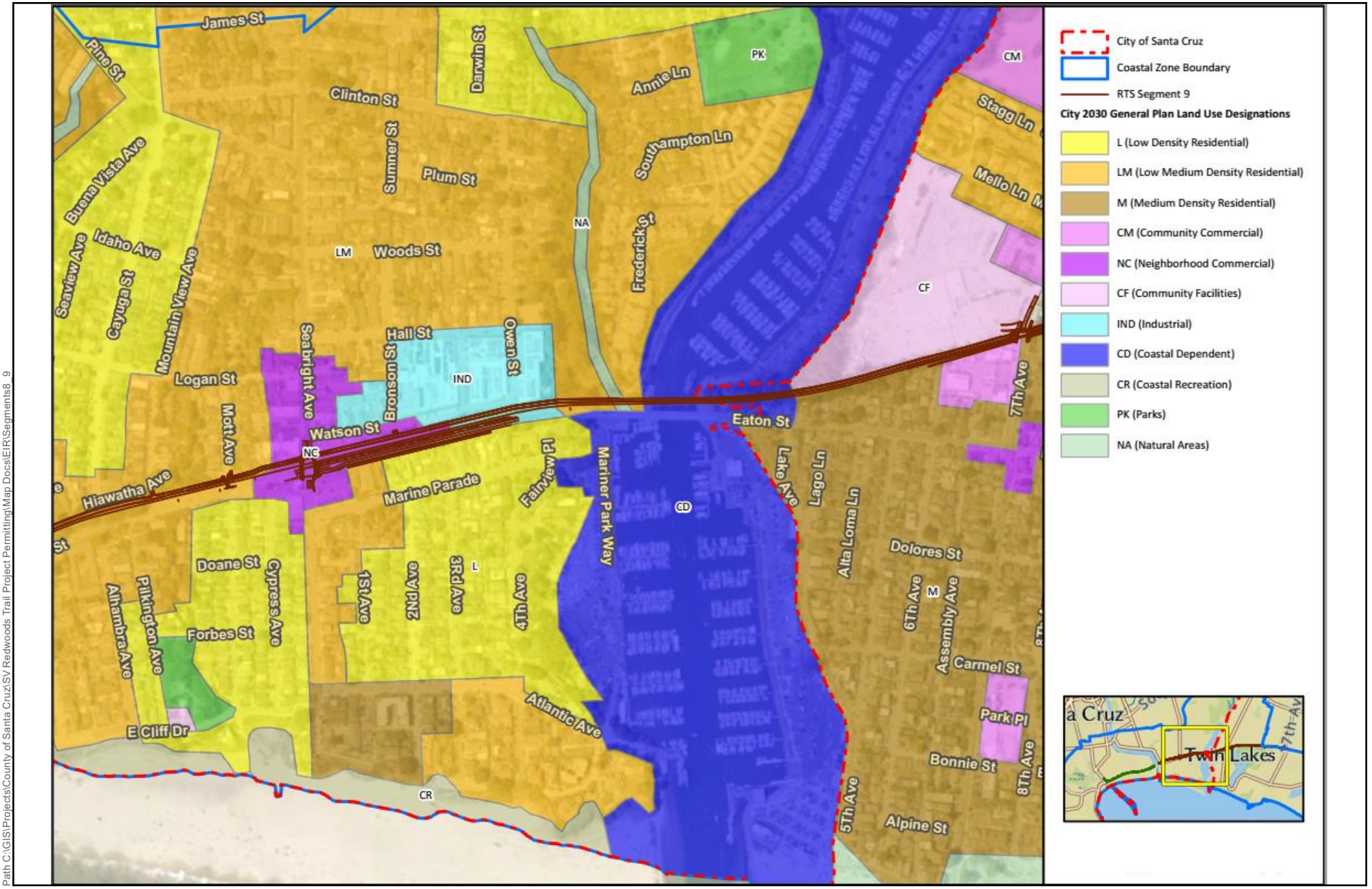
N

0 250 500

Feet

Figure 3.9-3a

City of Santa Cruz General Plan Land Use Designations – Segment 8 and Segment 9 (Western Terminus)



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

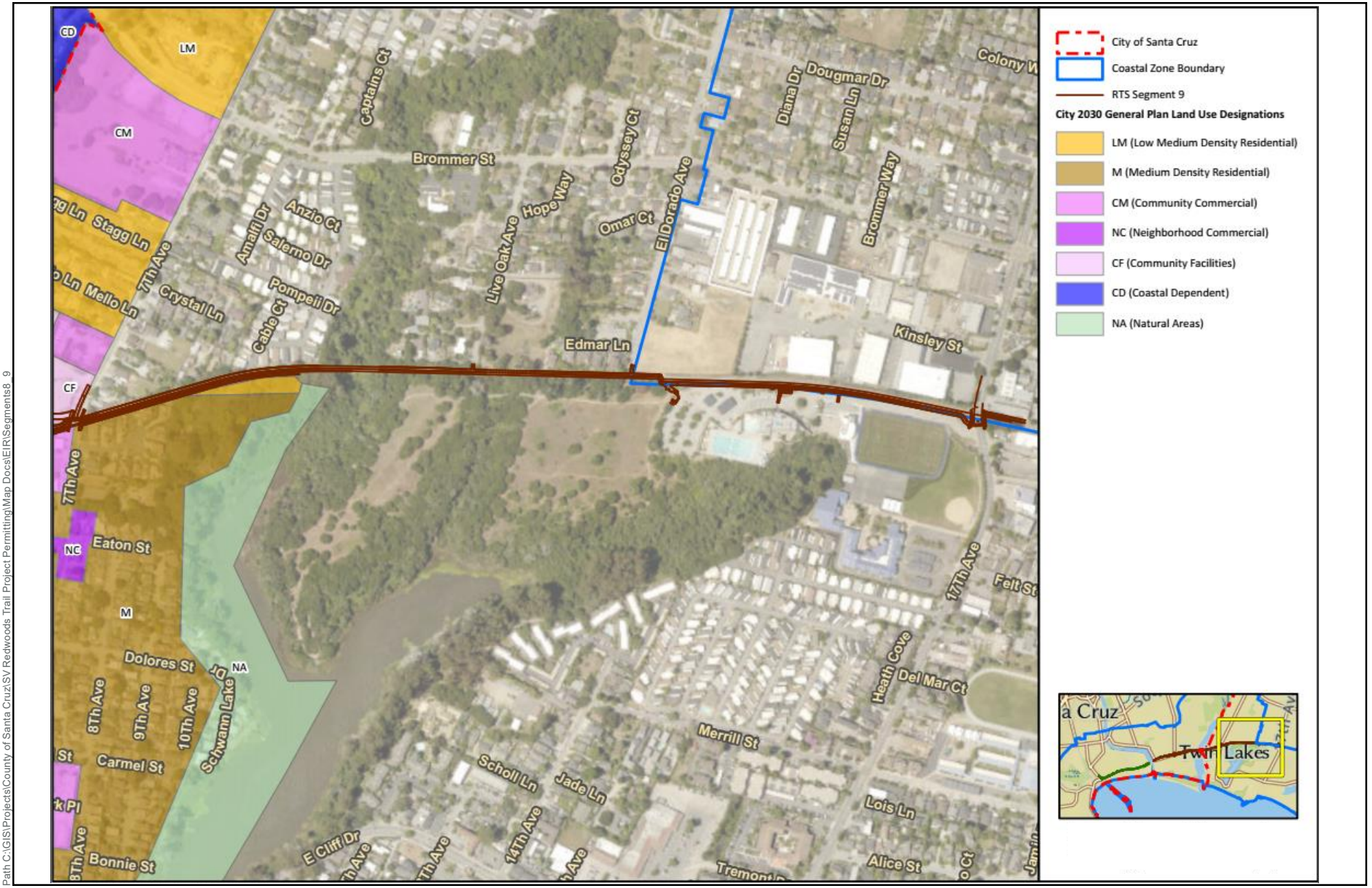
N

0 250 500

Feet

Figure 3.9-3b

City of Santa Cruz General Plan Land Use Designations - Segment 9 (Western Portion)



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

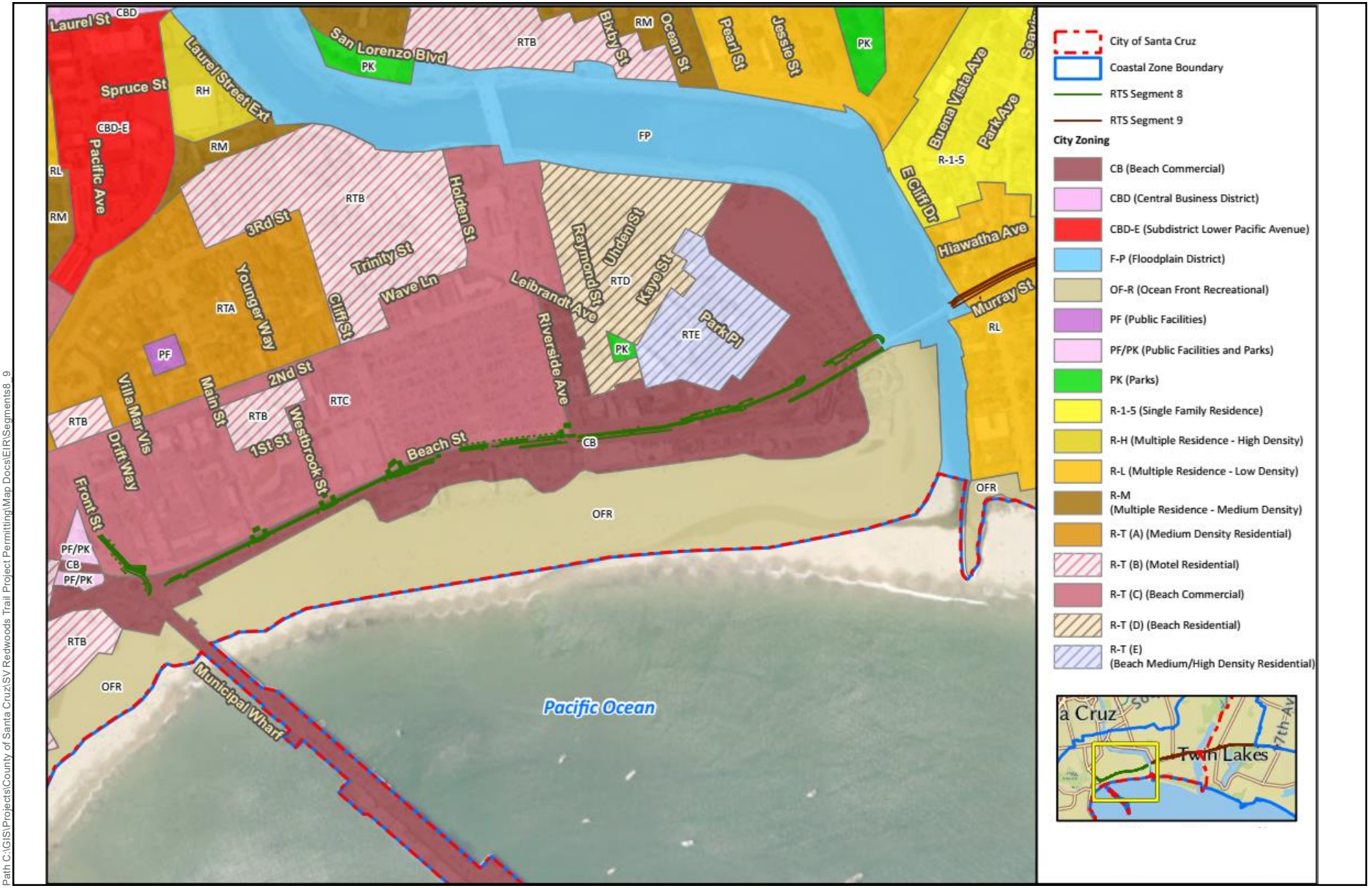
N

0 250 500

Feet

Figure 3.9-3c

City of Santa Cruz General Plan Land Use Designations - Segment 9 (Eastern Portion)



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

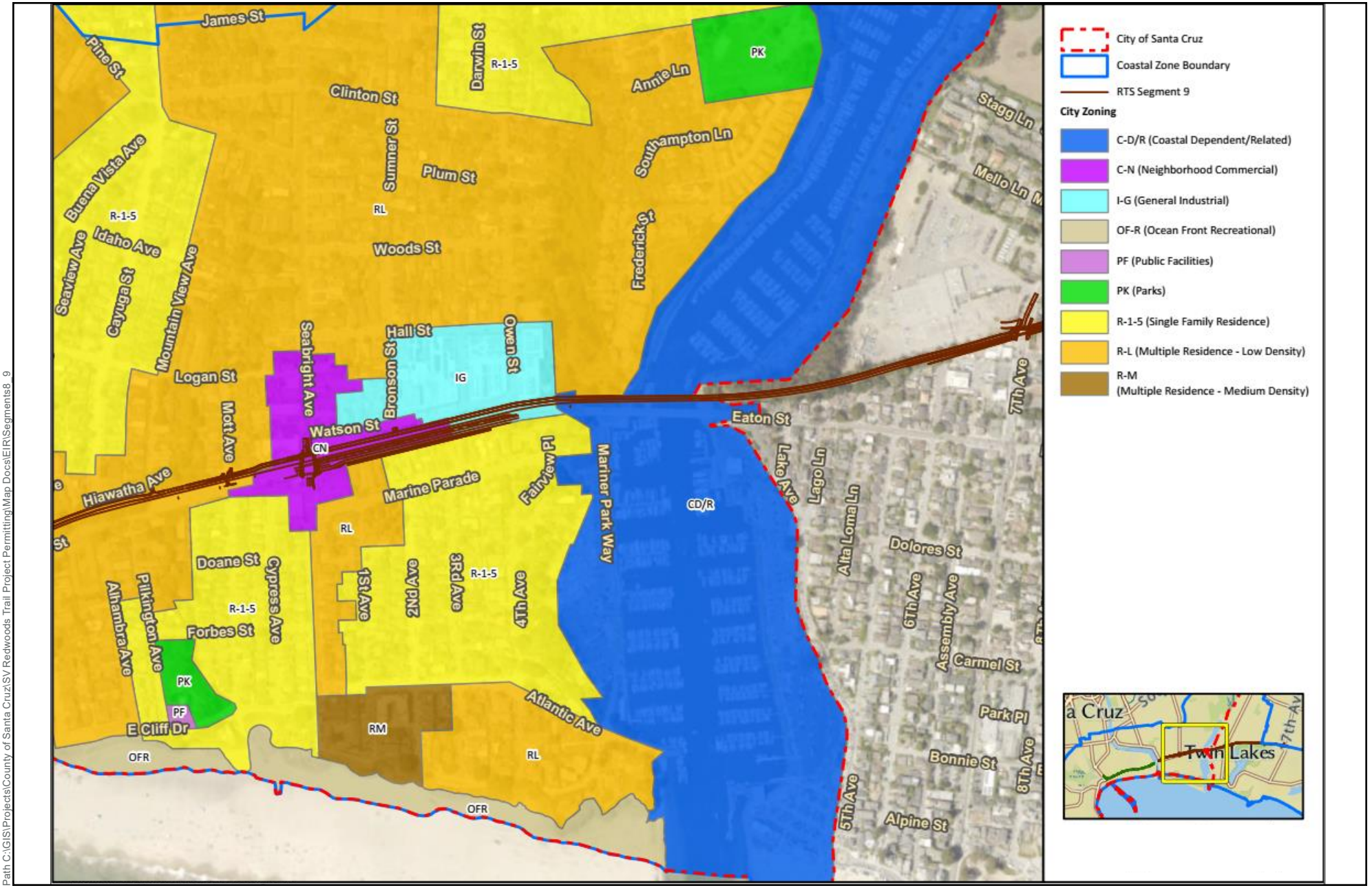
N

0 250 500

Feet

Figure 3.9-4a

City of Santa Cruz Zoning Districts – Segment 8 and Segment 9 (Western Terminus)



Path C:\GIS\Projects\County of Santa Cruz\SV Redwoods Trail Project Permitting\Map Docs\EIR\Segments8_9

Source: Rincon 2022.

Harris & Associates

N

0 250 500

Feet

Figure 3.9-4b

City of Santa Cruz Zoning Districts - Segment 9 (Western Portion)

3.10 Noise

This section describes the existing noise conditions and the regulatory framework applicable to noise and identifies potential noise impacts resulting from the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* construction and operation. **Table 3.10-1** summarizes identified impacts related to noise.

Table 3.10-1 Summary of Project Impacts Related to Noise[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
N-1. Construction may result in a substantial temporary increase in noise levels.	Potentially Significant	N-1	Less than Significant
N-2. Operation of the Project would not expose persons to or generate excessive noise levels.	Less than Significant	None required	Less than Significant
N-3. Construction would potentially expose persons to or generate excessive groundborne vibration or groundborne noise levels.	Potentially Significant	N-3	Less than Significant

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.10.1 Existing Conditions

Overview of Noise

Sound is described technically in terms of the loudness (amplitude) of the level and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear (RTC 2013).

Decibels are based on the logarithmic scale. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, a sound 20 dBA higher is four times as loud, and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud). In general, a 3 dB change in noise levels is noticeable, while 1–2 dB changes are generally not perceived. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness. Noise levels typically attenuate at a rate of 6 dBA per doubling of distance from point sources, such as industrial machinery. Noise from lightly traveled roads typically attenuates at a rate of about 4.5 dBA per doubling of distance. Noise from heavily traveled roads typically attenuates at about 3 dBA per doubling of distance (RTC 2013).

In addition to the actual instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period are more likely to be an annoyance or cause direct physical damage or environmental stress. Several rating scales have been developed to account for the known effects of noise on people. Based on these effects, the observation has been made that the potential for noise to impact people depends on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this factor. These scales

include the Equivalent Noise Level (Leq), the Day-Night Noise Level (Ldn) and the Community Noise Equivalent Level (CNEL) (RTC 2013).

Leq is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. Leq is the "energy" average noise level during the time period of the sample. Leq can be measured for any time period but is typically measured for 15 minutes, 1 hour, or 24 hours.

Ldn is a 24-hour, time-weighted average noise level. Time-weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. In the Ldn scale, those events that take place during the night (10:00 p.m. to 7:00 a.m.) are penalized by 10 dBA. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of day, where sleep is the most probable activity.

CNEL is similar to the Ldn scale except that it includes an additional 5 dBA penalty for events that occur during the evening (7:00 p.m. to 10:00 p.m.) time period. Thus, both the Ldn and CNEL noise measurements represent a 24-hour average of A-weighted noise levels with Ldn providing a nighttime adjustment and CNEL providing both an evening and nighttime adjustment.

Overview of Vibration

Vibration is defined as dynamic excitation of an elastic system, such as the ground or a structure, that results in oscillatory movement of the system (Caltrans 2013). Typical human-made causes of earthborne vibration include trains and construction activities such as blasting, pile driving, and operation of heavy earthmoving equipment. The resulting waves transmitted through solid material are referred to as structure-borne or groundborne vibration. Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Because the effects of vibration elicit a greater response than the vibration itself, vibration is typically only perceptible to people inside buildings (FTA 2018).

Vibration levels are typically expressed in terms of the peak particle velocity (PPV) and root mean square amplitude, both in inches per second. PPV is most appropriate for evaluating building damage potential. The California Department of Transportation estimates that continuous vibration levels of less than 0.08 PPV and single-event vibration levels of less than 0.12 PPV do not result in damage to even the most fragile historic buildings (Caltrans 2013). PPV but does not account for human response to vibration. The root mean square amplitude is used to represent average vibration amplitude, which accounts for the time it takes for the human body to respond to vibration signals. The root mean square amplitude is also given in decibel notation, referenced as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration relative to human response (FTA 2018). The general human response to different levels of groundborne vibration velocity levels is described in **Table 3.10-2**.

The rumbling sound caused by the vibration of room surfaces is called groundborne noise. Groundborne noise is often perceived as louder than community noise sources (broadband noise) at the same noise level. This is accounted for by setting the limits for groundborne noise lower than those set for broadband noise. The relationship between groundborne vibration and groundborne noise depends on the frequency content of the vibration and the acoustical absorption of the receiving room. If the vibration spectrum peaks at 30 hertz (Hz), the A-weighted sound level will be approximately 40 dBA lower than the velocity level. Correspondingly, if the vibration spectrum peaks at 60 Hz, the A-weighted sound level will be about 25 dBA lower than the velocity level (FTA 2018). The same human reaction corresponds to a given vibration velocity level and its resulting

noise level; therefore, for simplicity, this analysis refers only to a source's vibration velocity level (VdB) to describe potential human response to groundborne vibration and noise.

Table 3.10-2 Human Response to Groundborne Vibration

Vibration Velocity Level	Noise Level[a]	Human Reaction
65 VdB	40 dBA	Approximate threshold of perception for many people. Mid-frequency sound may disturb sleep.
75 VdB	50 dBA	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is annoying. Mid-frequency noise disturbs sleep and is considered annoying in more quiet areas.
85 VdB	60 dBA	Vibration acceptable only if there is an infrequent number of events per day. Low-frequency noise disturbs sleep, and mid-frequency noise can be annoying to daytime noise-sensitive land uses, such as schools.

Source: FTA 2018.

[a] Approximate noise level when vibration spectrum peak is near 60 Hz.

dBA = A-weighted decibel; VdB = vibration decibel

Sensitive Receptors

Noise level allowances for various types of land uses reflect the varying noise sensitivities associated with those uses. In general, noise-sensitive land uses (called "sensitive receptors") are any residence, hospital, school, hotel, library, office, or similar facility where quiet is an important attribute of the environment. Such uses have more stringent noise level allowances than most commercial or agricultural uses that are not subject to impacts such as sleep disturbance.

Passive parks are generally considered noise-sensitive because they typically involve activities that would be sensitive to noise, such as reading or conversation. On the other hand, parks used for active recreation purposes, such as a multi-use trail or public beaches, are generally not considered noise-sensitive as they usually involve sport activities or other active recreational pursuits.

The Project alignment extends through developed portions of the City of Santa Cruz (City) and Santa Cruz County (County), including residential, commercial, industrial, and recreational land uses, as well as upper Twin Lakes State Beach open space. The nearest noise-sensitive receptors are the residences located throughout the Project corridor and hotels located along Beach Street in Segment 8.

Existing Noise Levels

The ambient noise environment along the Project corridor is defined by vehicular traffic. The Project corridor also includes an existing railroad line, where Roaring Camp Railroad is only active in Coastal Rail Trail Segment 8 during the summer and holiday season. Beach Street and Murray Street are identified as potential sources of noise levels up to 60 dBA CNEL in the City's General Plan (City of Santa Cruz 2019). Additionally, major cross streets in the Project area are sources of noise, including Seabright Avenue, 7th Avenue, and 17th Avenue. No roadway noise contours are identified in the Project corridor in the County's General Plan (Santa Cruz County 2020).

3.10.2 Regulatory Setting

This section describes the federal, state, and local plans, policies, and laws relevant to noise for the Project.

Federal

Federal Transit Administration Vibration Guidelines

Although the Federal Transit Administration standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the Transit Noise and Vibration Impact Assessment Manual (FTA 2018) are routinely used for projects proposed by local jurisdictions. The manual includes guideline criteria for assessing the impacts of groundborne vibration, presented in **Table 3.10-3**.

Table 3.10-3 Federal Transit Administration Groundborne Vibration Impact Criteria

	Impact Levels (VdB)		
Land Use Category	**Frequent Events[a]**	**Occasional Events[b]**	**Infrequent Events[c]**
Category 1: Buildings where vibration would interfere with interior operations	65	65	65
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Source: FTA 2018.

[a] "Frequent Events" are defined as more than 70 vibration events of the same source per day.

[b] "Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.

[c] "Infrequent Events" are defined as fewer than 30 vibration events of the same source per day.

Vibration levels are measured in or near the vibration-sensitive use.

VdB = vibration decibel

State

As required by Section 65302 of the California Government Code, desirable noise levels are stated in the Noise Element of General Plans prepared by counties and cities. Division 28 of the California Health and Safety Code requires that the State Office of Noise Control in the Department of Health Services develop model elements and model noise ordinances to guide local jurisdictions in developing noise standards. The objective of noise standards is to provide the community with a means of judging the noise environment that it deems to be generally acceptable. The state has also adopted guidelines for land use compatibility and community noise environment in the State of California General Plan Guidelines, published by the State Governor's Office of Planning and Research (OPR 2017). Noise levels up to 60 dBA CNEL are considered normally acceptable for low-density residential land use, and noise levels up to 70 dBA CNEL are conditionally acceptable with incorporation of noise insulation features. Noise levels up to 70 dBA CNEL are normally acceptable for schools and commercial land use.

Local

City of Santa Cruz General Plan

The Hazards, Safety, and Noise Element of the City's General Plan establishes noise compatibility standards for land use categories in the City. Noise levels up to 60 dBA Ldn are considered normally compatible with residential development. General Plan Policy HZ3.2.1 requires that these standards be applied to new development, and Policy HZ3.2.2 establishes and Ldn noise level target of 65 dBA for outdoor activity areas in new multi-family residential development. Policy HZ3.2.2 establishes an interior noise standard for multi-family residential development of 45 dBA Ldn (City of Santa Cruz 2019).

City of Santa Cruz Municipal Code

Section 9.36.010(a) of the City's Noise Ordinance prohibits offensive noise between the hours of 10:00 p.m. and 8:00 a.m. within 100 feet of a building used for sleeping purposes or that would disturb people within hearing distance of the noise. Section 9.36.010(c) exempts construction noise from the ordinance between 7:00 a.m. and 8:00 a.m. if permitted by the City to alleviate traffic impacts or is required due to project completion time constraints (City of Santa Cruz 2022).

Additionally, the Noise Ordinance includes exemptions for Public Works projects in Sections 9.36.010(d) and 9.36.010(e). Section 9.36.010(d) states that Subsection 9.36.010(a) shall not apply to any person engaged in performance of a contract for public works awarded by the City in the event of emergency and if the city manager of the City of Santa Cruz so authorizes such work.

Subsection 9.36.010(e) states that the limits in Subsection 9.36.010(a) shall not apply to any person engaged in the performance of a public or private construction project where either the chief building official, Public Works director, Planning and Community Development director, or Water Department director, in his or her sole discretion, determines that the specific tasks hereinbelow delineated to be undertaken in connection with the subject construction project require an extended period of time to complete or, due to concerns based on public health and safety, those tasks should be undertaken between the hours of 10:00 p.m. and 8:00 a.m. When this determination has been made, the chief building official, Public Works director, Planning and Community Development director, or Water Department director may authorize such tasks to commence, be completed, or be undertaken between the hours of 10:00 p.m. and 8:00 a.m.; however, no such tasks shall be undertaken during these hours without the express written permission of the chief building official, Public Works director, Planning and Community Development director, or Water Department director and then only to the extent and between the hours specifically authorized in writing by the chief building official, Public Works director, Planning and Community Development director, or Water Department director. At a minimum, notice of the dates and times such tasks will be undertaken shall be provided by the contractor in accordance with City instructions to all residents, tenants, and property owners who occupy or own property within 300 feet of the site at which such tasks will be performed.

Santa Cruz County General Plan and Local Coastal Program

According to the County's General Plan Public Safety and Noise Element, noise-sensitive land uses include residential (residences, hotels, and motels), institutional (schools, libraries, museums, hospitals, personal care, meeting halls, and churches), and office (office buildings, business commercial, and professional). The recommended exterior noise limit for all noise-sensitive land uses is 60 dB Ldn (or CNEL), and the recommended maximum interior noise level is 45 dB Ldn (or

CNEL). The Public Safety and Noise Element includes goals and policies to regulate noise sources. In addition, the Circulation Element of the County's General Plan and Local Coastal Program includes Policy 3.7.2 that regulates noise from rail facilities. The following policies apply to noise in the County (Santa Cruz County 2020):

- **Policy 6.9.6.** Evaluate vibrations from rail activities for future development within 200 feet of the railroad tracks as part of environmental review
- **Policy 6.9.7.** Require mitigation of construction noise as a condition of future project approvals
- **Policy 6.10.1.** Require environmental review of all proposed transportation projects which may increase the average day/night noise levels including any increased or new uses of the Southern Pacific Railroad right-of-way
- **Policy 6.10.2.** Require the evaluation of mitigation measures for any project that would cause significant degradation of the noise environment by:
  (a) Causing the Ldn in existing residential areas to increase by 5 dB or more and remain below 60 dB
  (b) Causing the Ldn in existing residential areas to increase by 3 dB or more and, thereby, exceed an Ldn of 60 dB
  (c) Causing the Ldn in existing residential areas to increase by 3 dB or more if the Ldn currently exceeds 60 dB
- **Policy 3.7.2.** Require the design of new development near existing rail lines minimize the impact of existing and potential rail system noise and maximize setbacks for new development

Santa Cruz County Municipal Code

Chapter 8.30 (Noise) of the County's Municipal Code establishes noise regulations in Santa Cruz County. Section 8.30.010 of the County's Municipal Code states that "offensive noise" shall not be permitted between the hours of 10:00 p.m. and 8:00 a.m. Section 8.30.010 of the County Code states that daytime noise that exceeds 75 dB at the property line of the property from which the sound is broadcast should be considered offensive. The ordinance also states that the necessity of the noise should be taken into consideration in determining whether a noise is in violation of the code (8.30.010[C][5]) (Santa Cruz County 2021).

3.10.3 Methodology and Significance Thresholds

Methodology

The analysis of noise impacts considers the effects of both temporary construction-related noise and long-term noise associated with operation of the proposed trail. For construction noise, short-term noise levels are estimated using the Federal Highway Administration Roadway Construction Noise Model. The potential for exposure of persons to excessive groundborne vibration from construction is evaluated using reference vibration levels provided in the Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual (FTA 2018).

Significance Thresholds

The introduction at the beginning of Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *California Environmental Quality Act (CEQA) Guidelines*, which provides a sample Initial Study checklist that includes a number of

factual inquiries related to the subject of noise and the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For purposes of this Environmental Impact Report, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

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. Generation of excessive groundborne vibration or groundborne noise levels.

The Appendix G Initial Study checklist also includes questions that are not applicable to the Project, including if the Project is located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted; if the Project is located within 2 miles of a public airport or public use airport; or if the Project would expose people residing or working in the Project area to excessive noise levels. This topic can be found in Section 3.15, *Effects Found to be Less than Significant*.

3.10.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold 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.

Impact N-1 CONSTRUCTION MAY RESULT IN A SUBSTANTIAL TEMPORARY INCREASE IN NOISE LEVELS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)
Impact N-2 OPERATION OF THE PROJECT WOULD NOT EXPOSE PERSONS TO OR GENERATE EXCESSIVE NOISE LEVELS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The potential for the Project to generate noise during construction and operation is addressed below.

Construction

The operation of heavy equipment during construction of the Ultimate Trail Configuration would result in temporary increases in noise in the immediate vicinity. Construction equipment and vehicles could include backhoes, loaders, tractors, cranes, lifts, concrete trucks and pump, paving machines, compactors/rollers, and trucks for demolition, grading, and materials delivery. Power tools could include jackhammers, air compressors, generators, concrete saws, power drills, welding equipment, painting equipment, power and impact wrenches, and the like. Drilling would be required for retaining wall and viaduct or clear span bridge installation, but there would be no pile

driving. **Table 3.10-4** provides average noise levels associated with equipment that may be required for Ultimate Trail Configuration construction.

Table 3.10-4 Typical Construction Noise Levels

Equipment	Typical Noise Level (dBA) 50 Feet from Source	Typical Noise Level (dBA) 150 Feet from Source	Typical Noise Level (dBA) 275 Feet from Source
Backhoe	77.6	68	63
Loader	80	71	65
Tractor	84	75	69
Crane	80.6	71	66
Lift	74.7	65	60
Dump Truck	76.5	67	62
Concrete Pump Truck	81.4	72	67
Paver	77.2	68	62
Compactor/Roller	83.2	74	68
Jackhammer	88.9	79	74
Air Compressor	77.7	68	63
Generator	80.6	71	66
Concrete Saw	89.6	80	75
Pneumatic Tools	85.2	76	70
Rock Drill	81	72	66
Drill Rig	84.4	75	70

Source: FHWA 2006 for noise levels at 50 feet. Noise levels at other distances assume attenuation rate of 6 dBA for every doubling of distance.
dBA = A-weighted decibel

As described in Section 2.6, *Project Construction,* construction of the Ultimate Trail Configuration is planned to begin in 2023 or 2024 and would continue for approximately 24 months to construct the entire alignment. In Segment 8, construction would be limited to improving existing sidewalks, curb ramps, stairs, driveways, and bike lanes and thus be relatively minor. In general, construction activities for Segment 9 would include excavation of material sources, clearing and grubbing, tree removal, grading, retaining wall construction, drainage improvements, placement of crushed aggregate base and paved surface, revegetation, and installation of fencing, signs, and other trail- and safety-related features. There would be drilling associated with construction of the retaining walls and viaducts or clear span bridge but no pile driving.

Noise levels from Ultimate Trail Configuration construction were determined based on typical equipment noise levels determined by the Federal Highway Administration Roadway Construction Noise Model (RCNM). The construction area for the Project is linear and limited in width, which would limit the number of pieces of construction equipment in operation at once. The two noisiest pieces of construction equipment with the potential to operate simultaneously in the same location (tractor and compactor) were modeled using the RCNM and would have the potential to generate noise levels up to 88 dBA at 50 feet from the construction site. As shown in **Table 3.10-4,** individual

pieces of construction equipment would have the potential to reach noise levels up to 89.6 dBA (concrete saw). Similar equipment would be required throughout the 24-month construction duration. Noise levels from point sources, such as construction sites, typically attenuate at a rate of about 6 dBA per doubling of distance (Caltrans 2013).

Construction would take place during daytime hours and would therefore be consistent with the City Noise Ordinance. However, construction noise levels would have the potential to exceed the County Noise Ordinance standard of 75 dBA for offensive noise up to approximately 150 feet from the construction area for most equipment and up to 275 feet for the noisiest pieces of equipment. This standard for offensive noise is conservatively applied to sensitive receptors in both the City and County to screen for potential nuisance impacts from construction equipment.

Residences are located throughout the Project corridor, primarily in Segment 9. Construction of Segment 8 would consist of minor improvements but would still potentially require equipment listed in **Table 3.10-4**. Residences would be within the 150-foot screening distance for standard construction equipment in Segment 9, and the 275-foot screening distance for the noisiest pieces of construction equipment in Segments 8 and 9. Hotels are located within the 150-foot and 275-foot screening distances along Beach Street and north of Beach Street in the Segment 8 corridor.

The County Noise Ordinance states that the necessity of the noise should be taken into consideration in determining whether a noise is in violation of the code (8.30.010[C][5]). Permitted construction is specifically listed as an example. The Project would be consistent with the City Noise Ordinance and exempt from the County Noise Ordinance. However, in order to conservatively evaluate the impact to the experience of nearby residences related to construction noise exposure, the County Noise Ordinance is considered in this analysis. The noise levels in the ordinance have been established to determine whether construction noise levels would be considered acceptable to the community. Construction would occur during daytime hours, when residences and hotels are less sensitive to noise. Additionally, due to the linear nature of project construction, individual receptors would only be exposed to construction noise for short periods during the 24-month construction period. However, because construction noise would have the potential to exceed the noise level typically considered a nuisance in the County, a potentially significant impact would occur. This impact would be reduced by implementing noise-reducing measures where the use of construction equipment occurs within 275 feet of residences or hotels.

Therefore, this impact of the Ultimate Trail Configuration would be **less than significant with mitigation** (Mitigation Measure N-1). Implementation of Mitigation Measure N-1, described below, would muffle construction equipment to minimize levels at nearby sensitive receptors.

Mitigation Measure N-1: Implement Noise-Reducing Measures for Construction Equipment Used within 275 Feet of Residences or Hotels[1]

During construction, the construction contractor shall employ the following noise-reducing measures where use of construction equipment occurs within 275 feet of residences or hotels:

(1) Use acoustical shelters around any air compressors, generators, and any other stationary construction equipment not fitted with baffled enclosures;

(2) Use baffling around stationary construction equipment to reduce noise and vibration levels;

[1] This mitigation measure is a refinement of Mitigation Measure N-1(b) (Acoustical Shelters) and Mitigation Measure N-1(c) (Construction Equipment) from the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan Environmental Impact Report (RTC 2013). The original measures have been revised to consider Project-specific details, the specific locations of nearby sensitive receptors, and specific local noise concerns and regulation (County of Santa Cruz Noise Ordinance).

(3) Properly muffle and maintain all construction equipment powered by internal combustion engines;

(4) Prohibit unnecessary idling of internal combustion engines; and

(5) Whenever feasible, use electrical power to run air compressors and similar power tools.

Operation

Operation of the Project would not generate a net increase in vehicle trips in the Project area (refer to Section 3.12, *Transportation*). The Project is anticipated to primarily serve existing City and County residents and would not include any new parking lots or other amenities or facilities to accommodate new vehicle trips. Maintenance of the trail would be incorporated into existing underlying jurisdiction maintenance schedules for existing facilities, and vehicle trips would be minimal and intermittent. Therefore, operation of the Project would not result in a permanent increase in ambient vehicle noise levels.

Additionally, operational noise levels along the trail alignment would be influenced by the sound of trail users talking, occasional animal sounds, and occasional trail maintenance. In areas where the trail alignment overlaps with existing active transportation and recreational facilities, such as Segment 8, noise levels would be the same as those under existing conditions. In areas of the Project corridor where the trail would be providing a new transportation and recreational facility, the new noise sources would be intermittent and typically limited to normal conversation. Normal conversation typically results in a noise level of 65 dBA Leq at 3 feet (Caltrans 2013) and attenuates to below 50 dBA Leq at 15 feet. As such, intermittent noise at conversational levels would not be considered excessive at nearby receptors.

Regular maintenance activities could include but not be limited to occasional repairs and litter and debris (e.g., dirt or sand) removal that would potentially involve the use of power equipment. Refer to Section 2.5, *Project Operation and Maintenance*. It is currently unknown what specific type of equipment would be used for occasional repairs. However, maintenance would be occasional, limited in duration, and similar to existing noise levels generated by maintenance and landscape equipment used to maintain residential and commercial properties and the rail corridor. Thus, maintenance of the Project would not be expected to generate a noticeable increase in ambient noise levels compared to those under existing conditions.

Operational impacts of the Project would be **less than significant** because the Ultimate Trail Configuration would not generate noise levels that would be substantially different from those under existing conditions. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Similar to the Ultimate Trail Configuration described above, construction of the optional Interim Trail, which includes demolition of the rail and construction of the Interim Trail (Part 1), would require the operation of heavy construction equipment and result in temporary noise increases in the immediate vicinity during construction. Although the types of construction activities would vary between construction of the optional Interim Trail and the Ultimate Trail Configuration, construction of the optional Interim Trail would require a similar construction fleet, and the maximum noise levels described under Impact N-1 for the Ultimate Trail Configuration would also be anticipated for the optional Interim Trail (Part 1).

Similar to the Ultimate Trail Configuration, construction noise levels from implementing the Interim Trail (Part 1) would have the potential to exceed the County Noise Ordinance standard of 75 dBA for offensive noise up to approximately 150 feet from the construction area for most equipment and up to 275 feet for the noisiest pieces of equipment. Residences are located throughout the optional Interim Trail corridor, primarily in Segment 9. Residences would be within the 150-foot screening distance for standard construction equipment in Segment 9, and the 275-foot screening distance for the noisiest pieces of construction equipment in Segments 8 and 9. Hotels are located within the 150-foot and 275-foot screening distances along Beach Street and north of Beach Street in the Segment 8 corridor.

Similar to the Ultimate Trail Configuration, this impact could be reduced to a less than significant level by implementing noise-reducing measures where the use of construction equipment occurs within 275 feet of residences and hotels. This impact would be **less than significant with mitigation** (Mitigation Measure N-1)**.**

Operation of the optional Interim Trail as an active transportation route would be similar to the operation of the Ultimate Trail Configuration, as described for Impact N-2. This impact would be **less than significant.** No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to the Ultimate Trail Configuration and implementation of the Interim Trail (Part 1) described above, demolition of the Interim Trail and rebuilding the rail line (Part 2) would require the operation of heavy construction equipment and result in temporary increases in noise in the immediate vicinity during construction. Part 2 would require a similar construction fleet, and the maximum noise levels described under Impact N-1 for the Ultimate Trail Configuration would also be anticipated for this effort.

Similar to the Ultimate Trail Configuration and implementation of the Interim Trail (Part 1), construction noise levels from demolishing the Interim Trail and rebuilding the rail line (Part 2) would have the potential to exceed the County Noise Ordinance standard of 75 dBA for offensive noise up to approximately 150 feet from the construction area for most equipment and up to 275 feet for the noisiest pieces of equipment. Similar to the Ultimate Trail Configuration, this impact could be reduced to a less than significant level by implementing noise-reducing measures where the use of construction equipment occurs within 275 feet of residences and hotels. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measure N-1).

Following these construction activities, this part the optional Interim Trail (Part 2) would not operate as an active transportation corridor because there would be no trail; thus, there would be no operational noise sources and **no impact**.

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration as part of the optional Interim Trail (Part 3) would be similar to that described above for Ultimate Trail Configuration. Refer to the discussion above for Impacts N-1 and N-2 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The construction-related Impact N-1 would be **less than significant with mitigation** (Mitigation Measure N-1). The operational Impact N-2 would be **less than significant**, and no mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

When Interim Trail Parts 1, 2, and 3 are considered together, the construction-related noise effects would be greater because three parts requiring similar construction activity would be required. However, construction of the three parts would take place over decades and would be unlikely to result in a cumulative annoyance. As described in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, the timing for implementing Parts 2 and 3 is uncertain, and it is estimated that the Interim Trail (Part 1) could be in place for approximately 25 years before it is removed (Part 2). Once Part 2 is implemented and the Interim Trail is removed, the Ultimate Trail Configuration could be constructed the following year, resulting in a longer potentially continuous construction period that could be considered a cumulative annoyance. Nonetheless, the construction-related noise (Impact N-1) would be **less than significant with mitigation** (Mitigation Measure N-1).

When Interim Trail Parts 1, 2, and 3 are considered together, the operational noise (Impact N-2) would be similar to the Ultimate Trail Configuration and would not result in excessive noise. Impact N-2 would be **less than significant**, and no mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project with the optional Interim Trail would result in greater total exposure of sensitive receptors to construction noise compared to the Project without the Interim Trail because total construction activities and duration would increase by an additional 72 months. Additionally, impacts to receptors north of the rail line along Segment 9 would be slightly reduced during Parts 1 and 2 of the optional Interim Trail compared to the Ultimate Trail Configuration because construction on the rail line would be slightly farther away from these receptors. However, construction would be closer to receptors located south of the rail line, and impacts would be slightly increased to these receptors. However, Impact N-1 would still be **less than significant with mitigation** (Mitigation N-1). Operation of the Project, with or without the optional Interim Trail, would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be the same as the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. No additional receptors would be exposed to construction noise as a result of the East Harbor Connection. This impact would still be **less than significant with mitigation** (Mitigation Measure N-1).

Threshold B:	Generation of excessive groundborne vibration or groundborne noise levels.

Impact N-3 CONSTRUCTION WOULD POTENTIALLY EXPOSE PERSONS TO OR GENERATE EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

Groundborne vibration and noise would be limited to the construction phase. Additionally, there are no vibration-sensitive receptors located in the Project area, such as research, manufacturing, hospitals, or university research operations, where vibration would interfere with the operation of equipment. Therefore, building damage and annoyance to receptors are the main concerns related to construction vibration.

The PPV metric is most appropriate for evaluating building damage potential associated with vibration. Typical vibration levels for available construction equipment required for the Ultimate Trail Configuration are provided in **Table 3.10-5**. The California Department of Transportation estimates that vibration levels less than 0.12 PPV do not result in damage to even the most fragile historic buildings (Caltrans 2013). As shown in **Table 3.10-5**, the highest level of construction-related vibration during operation of a vibratory roller would be below 0.12 PPV beyond 35 feet from the source. All other equipment would be below 0.12 PPV within 25 feet of equipment operation.

Construction in Segment 8 would consist of minor improvements and would not require use of a vibratory roller. A potentially significant impact would not occur on Segment 8 of the Ultimate Trail Configuration. A roller would be required for trail construction on Segment 9. It is currently unknown whether a vibratory roller would be required; therefore, use of one is conservatively assumed. Several residences are potentially located within 35 feet of the trail alignment, including along Murray Street between East Cliff Drive and Mott Avenue, along Eaton Street between 5th Avenue and 6th Avenue, and intermittently along the rail corridor between 7th Avenue and El Dorado Avenue. However, residences are not historic buildings that are particularly sensitive to damage from vibration. Additionally, due to the linear nature of construction, use of a vibratory roller, if required, would only be used in the area closest to individual receptors for a minimal amount of time. As such, vibration from construction would not be expected to result in building damage at nearby structures.

VdB are most appropriate to describe vibration relative to human response and are used here to describe human response to groundborne vibration and its corresponding groundborne noise level (FTA 2018). As shown in **Table 3.10-5**, vibration levels would naturally reduce to below 85 VdB more than 50 feet from the construction area, which is the level that may be annoying to daytime noise-sensitive land uses. Sensitive receptors would be within 50 feet of the trail on Segment 9. The impact would only occur during operation of vibratory equipment, such as a vibratory roller, if required. Additionally, due to the linear nature of the Project, construction activities would only be within 50 feet of individual receptors for a short time. Additionally, construction would occur during the day and would not disturb sleep. However, if use of a vibratory roller is required, it could be an annoyance to adjacent receptors. This impact would be reduced by notifying residences of potential vibration exposure. Impacts of the Ultimate Trail Configuration related to groundborne vibration during construction would be **less than significant with mitigation** (Mitigation Measure N-3). Implementation of Mitigation Measures N-3 would reduce impacts by minimizing the potential nuisance of vibration by allowing surrounding uses time to prepare for a potential nuisance.

Table 3.10-5 Vibration Source Levels for Construction Equipment

Construction Equipment	Approximate PPV/VdB at 25 Feet	Approximate PPV/VdB at 35 Feet[a]	Approximate PPV/VdB at 50 Feet[a]
Large Bulldozer	0.089/87	0.05/83	0.031/78
Loaded Truck	0.076/86	0.05/82	0.027/77
Small Bulldozer	0.003/58	0.002/54	0.001/45
Jackhammer	0.035/79	0.02/75	0.01/70
Vibratory Roller	0.210/94	0.12/90	0.074/85

Source: FTA 2018.

[a] Based on the formula VdB = VdB(25 feet) – 30log(d/25) provided by the FTA (2006).

PPV = peak particle velocity; VdB = vibration decibel

Mitigation Measure N-3: Provide Notification of Construction Vibration to Residential Units within 50 Feet

The construction contractor shall provide written notification at least 1 week prior to the start of any construction activities involving the use of vibratory equipment to all residential units located within 50 feet of the construction area that will produce the vibration. The notice shall inform residents of the estimated start date and duration of daytime vibration-generating construction activities and provide a point of contact for vibration exposure complaints.

Optional First Phase: Trail on the Rail Line (Interim Trail)

Similar to the Ultimate Trail Configuration, groundborne vibration and noise associated with the optional Interim Trail would be limited to project construction, not operation.

1) Implementation of Interim Trail

Implementation of the optional Interim Trail (Part 1) would require a similar construction fleet as the Ultimate Trail Configuration, and the vibration levels described above under Impact N-3 would also be anticipated for the optional Interim Trail. If vibratory equipment is required for construction, vibration levels could result in a nuisance to nearby residences within 50 feet. Residences are located within 50 feet of the corridor where construction would occur throughout Segment 9. Like for the Ultimate Trail Configuration, if use of a vibratory roller is required, it could be an annoyance to adjacent receptors, and this impact would be reduced by notifying residences of potential vibration exposure. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measure N-3).

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to the Ultimate Trail Configuration and implementation of the Interim Trail (Part 1) described above, demolition of the Interim Trail and rebuilding the rail line (Part 2) would require a similar construction fleet, and the maximum vibration levels described above under Impact N-3 could also be anticipated for this effort. Use of vibratory equipment, if required, would have the potential to result in nuisance vibration up to approximately 50 feet from equipment operation. Like for the Ultimate Trail Configuration, if use of a vibratory roller is required, it could be an annoyance to adjacent receptors, and this impact would be reduced by notifying residences of potential vibration exposure. Therefore, this impact would be **less than significant with mitigation** (Mitigation Measure N-3).

3) Construction of the Ultimate Trail Configuration

Construction and operation of the Ultimate Trail Configuration as part of the optional Interim Trail would be similar to that described above for Ultimate Trail Configuration. Refer to the discussion above for Impact N-3 under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant with mitigation** (Mitigation Measure N-3).

Combined Effect of Interim Trail Parts 1, 2, 3

When Interim Trail Parts 1, 2, and 3 are considered together, the construction-related vibration effects would be greater because three separate parts requiring construction activity would be required. However, construction would take place over decades and would be unlikely to result in a cumulative annoyance. The impact would still be **less than significant with mitigation** (Mitigation Measure N-3).

Comparison of Proposed Project Impact with/without Optional Interim Trail

Total exposure to construction vibration would increase with the optional Interim Trail because total construction would increase by an additional 72 months. Impacts to receptors north of the rail line along Segment 9 would be slightly reduced during Parts 1 and 2 of the Interim Trail compared to the Ultimate Trail Configuration because construction on the rail line would be farther away from these receptors. However, construction would be closer to receptors located south of the rail line and impacts would be increased at these receptors. Construction noise would still be **less than significant with mitigation**.

Design Option: East Harbor Connection

The impact of implementing the East Harbor Connection, which would be a switchback trail between the Coastal Rail Trail and the East Harbor service road, would be the same as the impact described above for the Ultimate Trail Configuration and the optional Interim Trail. No additional receptors would be exposed to groundborne vibration as a result of this design option. The impact would continue to be **less than significant with mitigation** (Mitigation Measure N-3).

3.10.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
N-1. Construction may result in a substantial temporary increase in noise levels.	**LTSM** MM N-1	**LTSM** Similar, slightly greater MM N-1	**LTSM** Similar, slightly greater MM N-1	**LTSM** Similar, slightly greater MM N-1
N-2. Operation of the Project would not expose persons to or generate excessive noise levels.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
N-3. Construction would potentially expose persons to or generate excessive groundborne vibration or groundborne noise levels.	**LTSM** MM N-3	**LTSM** Similar, slightly greater MM N-3	**LTSM** Similar, slightly greater MM N-3	**LTSM** Similar, slightly greater MM N-3

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

This page intentionally left blank.

3.11 Public Safety and Services

This section identifies and evaluates impacts related to public safety and services that may arise through implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* along the Santa Cruz County Regional Transportation Commission (RTC)-owned Santa Cruz Branch Rail Line corridor in central Santa Cruz County (County), partially in the City of Santa Cruz (City) and partially in the unincorporated Live Oak area. The analysis addresses existing public safety features and services in addition to measures that have been included in the design of the Project to ensure that public safety and services are retained or enhanced following Project implementation. Public services analyzed in this section include emergency response, fire protection, police protection, schools, parks, healthcare facilities, and libraries. Impacts to other recreation facilities are discussed in Section 3.15, *Effects Found to be Less than Significant*. **Table 3.11-1** summarizes identified impacts related to public safety and services.

Table 3.11-1 Summary of Impacts on Public Safety and Services[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
PUB-1. The Project would not result in the need for additional fire protection facilities or emergency medical services response to maintain acceptable service ratios or response times.	Less than Significant	None Required	Less than Significant
PUB-2. The Project would not result in the need for additional police protection or law enforcement facilities to maintain acceptable service ratios or response times.	Less than Significant	None Required	Less than Significant
PUB-3. The Project would not result in the need for the construction of new or additional park facilities, nor the degradation of existing facilities.	Less than Significant	None Required	Less than Significant
PUB-4. The Project would not result in the need for the construction of new or additional health service facilities.	Less than Significant	None Required	Less than Significant
Beneficial Effect: The Project itself would provide a new transportation and recreational facility and would improve access to Twin Lakes State Beach park facilities and other parks and recreation facilities, such as the Santa Cruz Harbor, Simpkins Swim Center, and Santa Cruz Boardwalk. Additionally, the Project would improve access to the rail line for police, fire, and emergency response medical services.			

[a] The impacts apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted after the impact statement.

3.11.1 Existing Conditions

Regional and Project Corridor Setting

A wide range of state and local government entities provide extensive public services to City and County residents related to fire and police protection, public health and safety, education, parks, and general public resources, including libraries.

Agencies that provide services throughout the Project corridor are discussed below. Due to the cross-jurisdictional nature of the trail corridor, some public service providers would differ depending on the segment (i.e., whether the segment is in the County or City of Santa Cruz).

Emergency Response Services

Emergency response services are provided under the provisions established through the County Emergency Medical Service Plan that is administered by the County Public Health Department under the Santa Cruz County Health Services Agency (SCR911 2017). Public safety services are overseen by Santa Cruz Regional 9-1-1 (SCR911), formally the Santa Cruz Consolidated Emergency Communications Center, a joint powers authority that has been established for the County. All 911 calls are received by SCR911 and routed to the American Medical Response (AMR), which provides 24-hour American Life Support ambulance transport throughout the County or the appropriate fire or police department depending on the emergency being reported. The appropriate first responder is determined by the requirements of the emergency being reported and the provisions available to provide first response services in addition to the location and requirements for accessing the reported emergency.

Fire Protection Services

Fire protection in California is the responsibility of the federal, state, or local government, depending on the individual jurisdiction. The State of California is responsible for fire protection in the rural unincorporated areas of the County. The Project corridor is located in a Local Responsibility Area. The western portion of the Project corridor (all of Segment 8 and a portion of Segment 9) is provided service by the City of Santa Cruz Fire Department (SCFD). The eastern portion of the Project corridor (a portion of Segment 9) is provided service by the Central Fire District of Santa Cruz County (CFD).

SANTA CRUZ FIRE DEPARTMENT

SCFD has four stations within the City, three of which are within 1.25 miles of the Project corridor, including Station 1 at 711 Center Street, Station 2 at 1103 Soquel Avenue, and Station 3 at 335 Younglove Avenue (City of Santa Cruz 2022a). Services from the stations are available 24 hours per day, 7 days per week. SCFD staff has 60 members, including firefighters/paramedics, captains, battalion chiefs, fire prevention staff, training staff, and administrative staff. SCFD equipment includes four engines, one type 3 engine, and one truck. The SCFD also staffs a Lifeguard Headquarters adjacent to the Project corridor at 21 Municipal Wharf with 70 seasonal lifeguards.

CENTRAL FIRE DISTRICT

The CFD services the communities of Live Oak, Soquel, Capitola, Aptos, Rio Del Mar, and La Selva Beach. The CFD has seven stations and 120 active employees (CFD 2020). The station closest to the Project corridor is Station 1 at 930 17th Avenue, approximately 0.1 mile north of the rail corridor.

Police Protection Service

Police protection is provided throughout the Project corridor by a combination of Santa Cruz Police Department (SCPD) and County Sheriff's Office, which is supported by California Highway Patrol (CHP) and California Department of Fish and Wildlife (CDFW) as discussed below.

SANTA CRUZ POLICE DEPARTMENT

The SCPD serves the residents and visitors of the City. The SCPD employs 94 budgeted sworn officers and 25 non-sworn civilian staff (City of Santa Cruz 2022b). The SCPD splits the City into five patrol beats including West, East, Beach, Central, and Downtown. The Project corridor would be serviced by the police station at 155 Center Street, approximately 0.5 mile north of the Project corridor.

SANTA CRUZ COUNTY SHERIFF'S OFFICE

The County Sheriff's Office provides primary law enforcement services in the unincorporated portions of the County, along the eastern portion of the Project corridor (eastern portion of Segment 9). There are six County Sheriff's service centers in the County, with the headquarters at the Live Oak/Soquel Service Center at 5200 Soquel Avenue in the unincorporated community of Live Oak, approximately 1.5 miles north of the Project corridor.

CALIFORNIA HIGHWAY PATROL

The CHP is responsible for patrolling state highways and county roadways, enforcing traffic regulations, responding to traffic accidents, and providing service and assistance to drivers in disabled vehicles. The CHP maintains a mutual aid agreement with the County Sheriff's Office and assists local governments during emergencies when requested (Fish 2018). The County is located in the CHP Coastal Division whose service area includes 325 miles along the Central Coast. The area office in the County (Office 720) is located at 10395 Soquel Drive in the unincorporated community of Aptos, approximately 7 miles east of the Project corridor.

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

The CDFW provides two to three wardens throughout all of the County, including Twin Lakes State Beach adjacent to the trail corridor in Live Oak. The CDFW wardens cover an extensive area as the County supports special-status species, jurisdictional waterways, and areas where hunting may occur, either legally or illegally. Therefore, law enforcement provisions are coordinated between the CDFW wardens and the local sheriff's department to determine the most efficient and effective mode of response for each reported emergency (Fish 2018).

Healthcare Facilities

The Public Health Department of the Santa Cruz County Health Services Agency has contracted emergency ambulance services for unincorporated Santa Cruz County to the AMR since 1990 (Santa Cruz County 2012). The AMR provides 24-hour Advanced Life Support ambulance transport and maintains 10 ambulance stations throughout the County. The closest station to the Project corridor is approximately 1.25 miles north on Hubbard Street in the City of Santa Cruz. Between four and eight ambulances are deployed to station locations, depending on anticipated demand. The AMR also deploys additional units during peak demand times, such as holidays.

The major hospitals in the City and County include Dominican Hospital and Watsonville Community Hospital, which both operate emergency rooms. There are also a number of additional City, County, and privately operated medical facilities, including urgent care facilities provided, such as Doctors on Duty (urgent care facility). The closest emergency or urgent care facilities to the Project corridor include Sutter Palo Alto Medical Foundation at 2025 Soquel Avenue (1.2 miles), Doctors on Duty (urgent care facility) at 615 Ocean Street (1.5 miles), and Dominican Hospital at 1555 Soquel Drive (1.6 miles). Additionally, Kaiser Permanente is planning to construct a large outpatient facility with

an urgent care clinic to be located at 5940 Soquel Avenue in Live Oak, approximately 1.5 miles from the rail corridor.

Parks

The Project corridor is mostly developed within the RTC-owned Santa Cruz Branch Rail Line corridor right-of-way. From west to east, the Project corridor runs parallel to Santa Cruz Main Beach, Twin Lakes State Beach, and Simpkins Swim Center. State and local parks near the corridor are discussed below.

STATE

The State of California owns and operates 14 state parks throughout the County. Of these, the Project corridor extends through Twin Lakes State Beach. Twin Lakes State Beach extends for 1 mile along the Santa Cruz coast parallel to Murray Street, East Cliff Drive, and Portola Drive. The north portion of the Twin Lakes State Beach, nestled north of Schwan Lagoon, is within the Project corridor. Twin Lakes State Beach features Schwan Lake (Schwan Lagoon), which offers a variety of walking and hiking trails through a natural preserve of old oaks and coastal grasslands.

LOCAL

Local parks located or planned within the vicinity of the Project corridor are managed by the City of Santa Cruz Parks and Recreation Department and the Santa Cruz County Parks, Open Space and Cultural Services Department.

The City manages 35 parks and 12 facilities within the City, as well as 35 miles of trails. Two parklets, Beach Flats Park and Poets Park, as well as Tyrell Park and the Museum of Natural History, are located less than 0.2 mile north of the Project corridor (City of Santa Cruz 2022c). Nueva Vista Community Center is located near the two parklets. Additionally, the City owns and manages Santa Cruz Main Beach adjacent to the privately owned Santa Cruz Beach Boardwalk.

The Santa Cruz County Parks, Open Space and Cultural Services Department, maintains 38 neighborhood, community, regional, and rural parks; 27 coastal access points; and a regional swim center. There are approximately 223 miles of bikeways throughout the County, which includes 196 miles of bicycle lanes and 27 miles of separated bicycle paths (Santa Cruz County 2022a). A sampling of the recreational opportunities in the County include hiking, cycling, surfing, sailing, equestrian use, and nature viewing. The County's "Park Finder" map includes Twin Lakes County Park less than 0.1 mile south of the Project corridor and Simpkins Swim Center less than 0.1 mile south (Santa Cruz County 2022b).

Schools

There are 10 kindergarten through 12th grade (K–12) school districts in the County.

The western portion of the Project corridor is within the Santa Cruz City School District. The closest schools to the Project corridor include Gault Elementary School (0.6 mile), Bayview Elementary School (1.2 miles), Branciforte Middle School (1.2 miles), Mission Hill Middle School (1.8 miles), Santa Cruz High School (1.4 miles), and Harbor High School (1.6 miles).

The eastern portion of the Project corridor is within the Live Oak School District. The closest schools to the Project corridor include Shoreline Middle School (0.1 mile), Del Mar Elementary School (0.4 mile), and Live Oak Elementary School (0.6 mile).

Libraries

Santa Cruz City-County library system serves the County and City. The Santa Cruz County Public Library system includes 10 neighborhood branches. The closest library to the Project corridor is the Branciforte Branch Library, located at 230 Gault Street in the City of Santa Cruz, less than 1 mile north of the Project corridor.

3.11.2 Regulatory Setting

The following section summarizes the state, regional, and local policies and regulations applicable to the Project. There are no relevant federal regulations regarding public services applicable to the Project.

State

California Master Mutual Aid Agreement

The California Master Mutual Aid Agreement is a framework agreement between the State of California and local governments for aid and assistance by the interchange of services, facilities, and equipment, including but not limited to fire, police, medical and health, communication, and transportation services and facilities for emergency rescue, relief, evacuation, rehabilitation, and reconstruction services. The Project corridor is covered by a mutual aid agreement between the State, Santa Cruz County, and the City of Santa Cruz to provide fire and emergency response services, and the U.S. Bureau of Land Management, CDFW, CHP, California State Parks Department, and County Sheriff's Office to provide police services throughout the County.

Regional

Santa Cruz County Regional Transportation Commission 2045 Regional Transportation Plan

The Santa Cruz County RTC is responsible for developing, implementing, and regularly updating the Regional Transportation Plan (RTP) for the County. The RTP is a state-mandated plan that identifies transportation needs in the County over the next 20+ years. The Santa Cruz County RTC most recently approved a 2045 RTP in June 2022. The RTP estimates the amount of funding that will be available over this time frame and identifies a financially constrained priority list of projects. The 2045 RTP includes goals, targets, and policies that are relevant to the Proposed Project, such as the following:

- **Goal 1.** Establish livable communities that improve people's access to jobs, schools, recreation, healthy lifestyles and other regular needs in ways that improve health, reduce pollution and retain money in the local economy.
  - **Target 1.A.** Improve people's ability to meet most of their daily needs without having to drive. Improve access and proximity to employment centers.
  - **Target 1.B.** Re-invest in the local economy by reducing transportation expenses from vehicle ownership, operation and fuel consumption. Reduce smog-forming pollutants and greenhouse gas emissions.
  - **Target 1.C.** Improve the convenience and quality of trips, especially for walk, bicycle, transit, freight and carpool/vanpool trips.
  - **Target 1.D.** Improve health and reduce greenhouse gas emissions by increasing the percentage of trips made using active transportation options, including bicycling, walking and transit.

  - **Policy 1.1, Transportation Demand Management**. Expand demand management programs that decrease the number of vehicle miles traveled and result in mode shift.
  - **Policy 1.3, Transportation Infrastructure.** Improve multimodal access to and within key destinations for all ages and abilities.
  - **Policy 1.4, Transportation Infrastructure.** Ensure network connectivity by closing gaps in the bicycle, pedestrian and transit networks.

- **Goal 2**
  - **Target 2.A.** Improve transportation safety, especially for the most vulnerable users.
    - **Policy 2.1, Safety.** Prioritize funding for safety projects and programs that will reduce fatal or injury collisions.
    - **Policy 2.3, Emergency Services.** Support projects that provide access to emergency services.
    - **Policy 2.4, System Design.** Reduce the potential for conflict between bicyclists, pedestrians, and vehicles.
    - **Policy 2.5, Security.** Incorporate transportation system security and emergency preparedness into transportation planning and project/program implementation.

Local

Santa Cruz County General Plan

The County's General Plan provides a framework for development and growth in the County (Santa Cruz County 1994). The Parks, Recreation, and Public Facilities Element includes objectives and policies for the adequate provision of public services to support existing and future populations. Because the Project is being implemented by the federal government, local land use authority is preempted such that local policies and regulations do not directly apply to the Project. However, key parks and public facilities policies and objectives relevant to the Project include objectives to provide adequate public services including fire, emergency response, police and schools, and safe recreational areas and passive natural open spaces for the citizens of the County. Examples of these policies that pertain to adequate public services including fire, emergency response, police and schools, and safe recreational areas and passive natural open spaces are located in Chapter 7, *Parks, Recreation, and Public Facilities*, of the County's General Plan. Relevant policies are listed below:

- **Policy 7.1.4, Local Recreation Opportunities**. Provide a variety of local recreational facilities which serve all segments of the population based on the standards of the National Recreation and Parks Association, with priority given to facilities which can be utilized for youth recreation programs.
- **Policy 7.1.5, Access to Recreation Facilities**. Provide physical access to all recreation facilities through provision of public transportation, trail system development, protection of prescriptive rights to beach access trails, and recreation programs.
- **Policy 7.16.1, Reviewing New Development for Fire Protection**. Require review of all new developments, including building permits on existing parcels of record, by the County Fire Marshal or local fire agency, and require adequate access, water supply and location with respect to fire stations and Critical Fire Hazard Areas in order to ensure adequate fire protection.
- **Policy 7.16.2, Development to be Consistent With Fire Hazards Policies**. Allow development approvals only if adequate water supply, access, and response time for fire protection can be made available in accordance with the Fire Hazards policies found in section 6.5.
- **Policy 7.17.2, Maintaining Adequate Levels of Service**. Provide adequate levels of police service to protect County residents and businesses.

Santa Cruz County Parks Department Strategic Plan

The Santa Cruz County Parks Department Strategic Plan (Santa Cruz County 2018) provides a 10-year roadmap for the department that will assist in adapting and growing the support for a healthy, connected, and culturally vibrant Santa Cruz County. It also creates a resource for understanding what the department does and how the department serves the community. The plan provides guidance for partnering and collaborating with other relevant agencies, describes a collective vision for the County Parks Department, and establishes goals and objectives within the 10-year time frame. The goals of the plan include maintaining and enhancing the quality of parks facilities and improving access between existing parks and programs.

Santa Cruz Public Libraries Facilities Master Plan

The Santa Cruz Public Libraries Facilities Master Plan 2014–2023 (Santa Cruz Public Libraries 2013) was developed to create modern library facilities that provide updated library service for the entirety of the County. The library system throughout the County includes 10 branch libraries, a bookmobile, and a headquarters facility that work together as an integrated system, sharing resources, programs, and administration. The plan includes three planning stages for each library facility; these include the Capital Maintenance, Gain, and Attain Plans. These plans identify funding mechanisms and growth opportunities for each library facility in addition to measures to provide overall general maintenance, improvements, and eventual building and program replacement to provide modern library services at each location.

Santa Cruz County Municipal Code

The County's Municipal Code, Chapter 15.03, establishes parks and recreation development impact fees to expand the County's system of parks and recreation facilities through an assessment on new development projects authorized through the approval of building permits for commercial and residential development in the unincorporated portions of the County. Specifically, Chapter 15.03 requires five separate parks and recreation Mitigation Fee Act park dedication funds to receive collected revenues from any fees or exactions. The County's Municipal Code, Chapter 15.02, similarly requires financing for school facilities with development fees and dedications consistent with state law.

City of Santa Cruz General Plan

The City's General Plan, adopted in June 2012 and last amended in October 2019, guides development in the City through 2030 by adhering to a vision to create a satisfying quality of life and preserves the diversity and quality of its natural and built environment (City of Santa Cruz 2012). Chapter 7, Civic a*nd Community Facilities*, and Chapter 9, *Parks, Recreation, and Open Space*, include goals, policies, and actions related to the provision of public safety and services. Relevant goals and policies include the following:

- **Policy HZ1.1.** Ensure emergency preparedness.
- **Policy HZ1.1.3.** Ensure that new development design, circulation, and access allows for maintaining minimum emergency response times.
- **Policy HZ1.2.** Respond to emergencies rapidly.
- **Policy HZ1.4.** Continue to meet fire safety and firefighting needs.
- **Policy CC7.1.** Ensure adequate police training and resources.
- **Policy PR1.1.** Provide and manage a system of parks and recreation related facilities that serve the needs of residents and visitors.

- **Policy PR1.3.** Maintain level of service standards for park acquisition and development.
- **Policy PR4.1.** Provide and maintain an accessible citywide trail system within the city and connect it to regional trails.

City of Santa Cruz Active Transportation Plan

The City's Active Transportation Plan was adopted in February 2017 and acts as a guide for active mobility in and around the City (City of Santa Cruz 2017). The Active Transportation Plan assesses the needs of bicyclists and pedestrians, identifies a list of programs and projects to meet those needs, and identifies a funding and implementation methodology for those programs and projects. The Active Transportation Plan includes goals, objectives, and policies to meet the vision to create "a comprehensive active transportation system that is easy, safe, fun, and serves people of all ages and abilities."

City of Santa Cruz Municipal Code

The City's Municipal Code, Chapter 18.49, *Public Safety Impact Fee*, requires development fees for the planned and incremental expansion of public safety facilities. New residential and nonresidential development shall pay its fair share of public safety facilities generated by growth from new development in a balanced and efficient manner that will mitigate the adverse impacts on public safety services and promote the public health, safety, and general welfare. The City's Municipal Code, Chapter 23.28, states that as a condition of approval of a final map or parcel map, the subdivider shall dedicate of all parcels of land within the subdivision that are needed for streets and alleys, including access rights and abutters' rights, drainage, public greenways, scenic easements, public utility easements, coastal access easement or dedicator, and other public easements or rights-of-way.

3.11.3 Methodology and Significance Thresholds

Methodology

The assessment of impacts to public safety and services is based on a review of emergency response, fire and police protection services, and schools and libraries and consideration of potential changes in the level of service that may be required as a result of the addition of a new trail along Segments 8 and 9 of the Project corridor.

Significance Thresholds

Notably, the California Environmental Quality Act (CEQA) does not treat impacts on service ratios or responses times to be adverse effects on "the environment" (*City of Hayward v. Board of Trustees of the California State University* [2015] 242 Cal.App.4th 833, 843). Rather, what matters under CEQA is whether, in order to maintain adequate service ratios or response times, a city, county, or other service provider would have to build new or expanded physical facilities, which themselves could result in environmental effects. (Id. at pp. 843–844; see also *Goleta Union School Dist. v. Regents of University of California* [1995] 37 Cal.App.4th 1025, 1032–1033 [CEQA is not concerned with school overcrowding, which is a socioeconomic effect, but is concerned with the impacts of school construction needed to alleviate overcrowding.]) Thus, under CEQA, the environmental analysis relating to the provision of the above-mentioned services should be limited to possible construction-related impacts, if any, associated with the services.

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of public safety and services and the other environmental topics. Thus, the thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For purposes of this Environmental Impact Report, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- Fire protection
- Police protection
- Schools
- Parks
- Other public facilities, including healthcare facilities and libraries

The Project would not generate population that would use schools or libraries. Therefore, schools and libraries are not included in the analysis below. The Project would result in the construction of a new recreational facility; thus, significance thresholds regarding substantial physical deterioration of parks or recreational facilities or necessitation of construction of a new recreational facility are similarly not included in the analysis below. Additional analysis related to schools, libraries, and recreation are included in Section 3.15.

3.11.4 Project Impact Analysis

For each impact, the analysis for the Ultimate Trail Configuration is presented first, followed by the analysis for the optional first phase Interim Trail. The analysis of the Interim Trail has a separate impact discussion for each of the following three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Threshold A:	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection Police protection Parks

Impact PUB-1 THE PROJECT WOULD NOT RESULT IN THE NEED FOR ADDITIONAL FIRE PROTECTION FACILITIES OR EMERGENCY MEDICAL SERVICES RESPONSE TO MAINTAIN ACCEPTABLE SERVICE RATIOS OR RESPONSE TIMES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Impacts related to emergency response or fire protection are limited to operational impacts. Construction of the Project would be temporary in nature, and the provision of emergency response or fire protection facilities and services would not be impacted. This impact would be **less than significant.** No mitigation is required.

Operation

The Project would introduce a paved multi-purpose trail along the rail corridor. As stated in Section 2.5, *Project Operation and Maintenance*, it is estimated that there could be an average of approximately 3,500 trail users daily. The increased human activity along the Project corridor could result in additional calls for emergency response and fire protection services to this area of the City and County. Additional calls could require the need for additional personnel or expansion of services, which could result in the need to construct additional facilities.

The Project is a trail and does not include the construction of buildings or other facilities that present unique challenges for fire protection and emergency response services.

Increased use of the corridor by trail users is not expected to adversely affect response times or generate a need for emergency services and/or additional personnel that warrants the expansion of existing facilities or construction of new facilities (e.g., construction of new fire stations or other emergency response facilities) (Mack 2022), which could then result in indirect environmental impacts.

Additionally, the increased visibility through vegetation removal and trail installment could reduce loitering or inappropriate activities along the Project corridor that can start fires, which could reduce the need for CFD services along the corridor (Mack 2022).

The trail width would be sufficient for emergency access by responders and first response equipment, such as ambulances and fire trucks. Emergency vehicles could access the trail from the roadway crossings and trail connections listed in Section 2.4, *Project Characteristics*. The CFD indicated that 8 feet is the minimum sufficient width for ambulances to access an area, and ambulances can navigate 7-foot-wide chokepoints when necessary and if approved by the department. When an ambulance cannot reach a certain area, foot access with a wheeled gurney is an acceptable access method. Fire vehicle access requires a minimum width of 9 feet, 6 inches (Mack 2022).

On Segment 8, the existing 12-foot-wide sidewalk and 8-foot-wide two-way bike facility on the roadway would be not altered substantially. Therefore, the existing conditions for emergency response would generally remain unchanged.

On Segment 9, the typical width of the paved trail would be 12 feet. The trail width would be reduced to between 9 feet, 6 inches, and 10 feet, 4 inches, in certain locations. Trail widths would accommodate ambulances and fire vehicles. Additionally, as stated by the CFD, the trail would

generally improve emergency access along the railroad tracks by providing paved access along the corridor (Mack 2022).

In the event that ambulance transportation service is required, the AMR would be contacted. The AMR has a number of facilities in the County, the closest of which to the Project corridor is located at 116 Hubbard Street in the City of Santa Cruz. This facility serves the Project corridor, and ambulance availability fluctuates between four and eight ambulances depending on the expected needs and prior season fluctuations in the County (Santa Cruz County 2012). The AMR does not anticipate that the expansion of the proposed recreational opportunities on all segments of the Monterey Bay Sanctuary Scenic Trail (MBSST) Network would require additional ambulance service to continue to effectively serve their service area because none of these projects, including the Project, would result in a permanent increase in the overall population (RTC 2013).

Further, the SCFD and CFD monitor population growth and projections in the City of Santa Cruz and Santa Cruz County and respond with fluctuations in provisions to improve response times and to meet the needs of the changing population. The Project would not result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable emergency response or fire protection services. This impact would be **less than significant.** No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The impacts related to emergency response or fire protection from implementation of the Interim Trail would be similar to that discussed above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Implementation of the Interim Trail would include removing the rail tracks/ties and constructing the Interim Trail on the rail bed. Similar to the Ultimate Trail Configuration, impacts related to emergency response or fire protection are limited to operational impacts. Construction of the Interim Trail would be temporary in nature and the provision of emergency response or fire protection facilities and services would not be impacted.

The operational impacts of the Interim Trail would be similar to the operational impacts described above for the Ultimate Trail Configuration. The Interim Trail would have a similar design and estimated number of trail users along the same corridor. Implementation of the Interim Trail would not result in the construction of buildings or other facilities that present unique challenges for fire protection and emergency response services. Trail users are not expected to generate a need for emergency services that warrants the expansion of existing facilities or emergency response services or the construction of new fire stations or other emergency response facilities. Additionally, the trail width of the Interim Trail would be sufficient to support emergency vehicles because it would not alter the existing width of Segment 8, and the width of Segment 9 would typically be 16 feet and a minimum of 12 to 16 feet at certain roadway, creek, and bridge crossings. The Interim Trail would not result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable emergency response or fire protection services. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line would remove the trail and re-install the rail tracks/ties on the rail bed. Demolition of the Interim Trail and rebuilding of the rail line would be temporary in nature. The provision of emergency response or fire protection facilities and

services would not be adversely impacted because the demolition of the Interim Trail would result in an increase in activity in the Project corridor, which is expected to minimize loitering or inappropriate activities that can start fires. Further, with the trail removed, there would be fewer emergency calls from trail users. Therefore, this impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Impacts from the construction of the Ultimate Trail Configuration would be the same as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Construction and operation of the Ultimate Trail Configuration would not result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable emergency response or fire protection services. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effect of the Interim Trail on facilities to maintain acceptable emergency response or fire protection services would be **less than significant**. The Interim Trail would not result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable emergency response or fire protection services. The Interim Trail would not generate a permanent population. Trail users are not expected to generate a need for emergency services that warrants the expansion of existing facilities or emergency response services or the construction of new fire stations or other emergency response facilities. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Impacts from the Project, with and without the optional Interim Trail, would be similar. There would be a similar number of estimated trail users, and neither scenario would result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable emergency response or fire protection services. Impacts for the Project, with and without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. With this additional trail connection, the Project impacts to fire and emergency response would be slightly higher because this additional connection point could encourage more people to use the trail and thus slightly increase the number of trail users. However, the increase in number of trail users would be minimal, and existing fire and emergency services would be sufficient. Impacts associated with the provision of new or expanded facilities to maintain acceptable emergency response or fire protection services for the East Harbor Connection would also be **less than significant**.

Impact PUB-2 THE PROJECT WOULD NOT RESULT IN THE NEED FOR ADDITIONAL POLICE PROTECTION OR LAW ENFORCEMENT FACILITIES TO MAINTAIN ACCEPTABLE SERVICE RATIOS OR RESPONSE TIMES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

Construction

Impacts related to police protection and law enforcement are limited to operational impacts. Construction of the Project would be temporary in nature, and the provision of police protection or law enforcement facilities and services would not be impacted. This impact would be **less than significant**. No mitigation is required.

Operation

As described for Impact PUB-1, the Project would introduce a paved multi-purpose trail along the rail corridor and an average of approximately 3,500 trail users daily. The increased human activity along the Project corridor, including the potential for increased persons who are unhoused, loitering, or trespassing onto adjacent lands, could result in additional calls from the public for police protection or law enforcement service. Additional calls could require the need for additional personnel or expansion of services, which could result in the need to construct additional facilities.

Police protection services are provided by the SCPD and County Sheriff's Office, with support from the CHP and CDFW. The Project would not require the construction of additional SCPD or County Sheriff's stations or the expansion of services currently provided by the SCPD or the County Sheriff's Office because the Project would not result in an increase in population.

Potential safety issues associated with the Project include trespassing on adjacent lands, vandalism, and the establishment of encampments, all of which may increase crime. However, the Project includes only one planned bench (at the Simpkins Swim Center connection), which would reduce loitering or sleeping. Benches could be added along the trail alignment in the future where there is sufficient space. There would be no bathrooms as part of the Project, which would help prevent vandalism and loitering around the facilities. The Project would include installation of safety fencing to separate trail users from the rail, as needed, and in other areas for safety and security in accordance with the MBSST Network Master Plan. These design features would likely further aid in minimizing vandalism and loitering that may occur along the Project corridor because they also encourage trail users from staying on the established trail.

If illegal encampments were established along the Project corridor, the local sheriff or SCPD would respond upon being informed of their presence. It is the duty of the County Sheriff's Office or SCPD to both cite and relocate those citizens who illegally camp in the unincorporated County public lands. The County Sheriff's Office or SCPD would relocate the citizen and all belongings to the appropriate facility in the County in accordance with the Homeless Services Center and remove debris and waste from the site. The County would provide appropriate services for individuals that may include transitional shelters, permanent housing programs, and income and employment support with the goal of reducing the overall unhoused population throughout the County (Fish 2018). If ongoing illegal camping is identified along the Project corridor, regular patrol of the alignment by the County Sheriff's Office or SCPD would be instated to ward off the establishment of permanent illegal campers.

The County Sheriff's Office predicts that the trail would improve safety, considering that the increased visibility along the Project corridor would reduce loitering and camping by unhoused individuals (Hop and Baldrige 2022). Additionally, several measures would occur to prevent camping or loitering altogether. The Sheriff's Office indicated that lighting, fencing, and signage would be useful to reduce crime in the Project corridor (Hop and Baldrige 2022). New lighting and fencing would be installed along the Project corridor, as outlined in Section 2.4. Signage would be posted indicating that camping and loitering are prohibited from dusk to dawn. Further, the Project would increase access for police patrol by clearing the areas around the existing rail and adding access points, enhancing overall safety (Hop and Baldrige 2022).

The planned increase in people using the rail corridor for transportation and recreation would not require additional police protection services, considering that most trail users would already be present in the service area using different roads, sidewalks, bike lanes, and mode of transportation for travel. Therefore, additional police protection services or facilities would not be necessary to serve trail users.

In summary, existing police services; project features such as lighting, fencing, and signage; and improved access to the Project corridor are expected to minimize potential illegal activities such as vandalism, trespassing, and the establishment of illegal encampments. In addition to trail users, there could be unhoused people resting or loitering. Thus, the Project is not expected to result in the need for additional police protection or law enforcement facilities as existing services would be sufficient to address infrequent occurrences of criminal activity.

Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable police protection or law enforcement services. This impact of the Proposed Project would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Impacts related to police protection or law enforcement services from implementation of the Interim Trail would be similar to that discussed above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* because the trail would be in the same general location and the anticipated use would be the same. The increased human activity along the Project corridor, including the potential for persons experiencing homelessness loitering or trespassing onto adjacent lands, could result in additional calls for police protection or law enforcement service. However, the construction of additional facilities would not be required to maintain the provision of law enforcement services, as discussed directly above for the Ultimate Trail Configuration.

Compared to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, impacts to trespassing and vandalism would be similar. Impacts would be limited through project features such as lighting, fencing, and signage and improved police access to the Project corridor. There would also be fencing between the trail and adjacent land uses in areas where no existing natural barriers occur would be implemented. Therefore, implementation of the Interim Trail would not result in substantial adverse physical impacts associated with the provision of new or expanded facilities to maintain acceptable police protection or law enforcement services. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

The impacts of demolition of the Interim Trail and rebuilding the rail line would be similar to those described above for the Ultimate Trail Configuration. Demolition of the Interim Trail and rebuilding of the rail line would be temporary in nature, and the provision of police protection or law enforcement facilities and services would be reduced because there would no longer be recreational users along the trail requiring police services. This impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

The impacts of the implementation construction of the Ultimate Trail Configuration would be the same as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. The increased human activity along the Project corridor, including the potential for loitering or trespassing onto adjacent lands, could result in additional calls for police protection or law enforcement service. However, the Project would not result in an increase in population. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

When considered together, the Interim Trail Parts 1, 2, and 3 would not result in a substantial impact to police protection or law enforcement facilities and services. There are adequate police protection and law enforcement facilities in the region to serve the Interim Trail once it is constructed (Part 1), and this is expected to be the case in the future when the Ultimate Trail Configuration is constructed (Part 3). Therefore, impacts related to police protection or law enforcement facilities and services would be **less than significant**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts to police protection or law enforcement facilities. Both options would be in the same general location, and the anticipated number of users would be the same. Existing police services; project features such as lighting fencing, and signage; and improved access to the Project corridor are anticipated to minimize potential illegal activities such as vandalism, trespassing, and illegal camping. Therefore, construction of the final phase of the Interim Trail option, the construction of the Ultimate Trail Configuration, would have similar impacts as the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Impacts of the Project, with and without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. With this additional trail connection, the Project impacts to police services would be slightly higher because this additional connection point could encourage more people to use the trail and slightly increase the number of trail users. However, the increase in number of trail users would be minimal and existing police and emergency services would be sufficient. Impacts associated with the provision of new or expanded facilities to maintain acceptable police protection and law enforcement facilities for the East Harbor Connection would also be **less than significant**.

Impact PUB-3 THE PROJECT WOULD NOT RESULT IN THE NEED FOR THE CONSTRUCTION OF NEW OR ADDITIONAL PARK FACILITIES, NOR THE DEGRADATION OF EXISTING FACILITIES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Project construction activities would take place within approximately 1,052 square feet of Twin Lakes State Beach's jurisdictional area to improve the existing unpaved trail extending from the rail corridor and Simpkins Swim Center to trails in the upper portion of Twin Lakes State Beach. No other existing parks would be impacted by Project construction. Construction activities at upper Twin Lakes State Beach would result in construction-related dust, emissions from construction equipment and worker vehicles, and erosion, all of which could disturb park users. Construction activities would temporarily disrupt access and use of the existing trail. However, alternate access to the Twin Lakes State Beach and its remaining facilities would be maintained during project construction. In addition, best management practices, as identified in Section 2.6, *Project Construction*, include construction-related dust, emissions, and erosion control measures. The Project would not significantly affect the use of the existing trail once the improvements, such as paving, are completed. This impact would be **less than significant**. No mitigation is required.

Operation

The physical environmental effects of developing a new trail (the Project) are addressed in other sections of this Environmental Impact Report; therefore, this discussion focuses on the potential impacts to existing parks and trails.

The Project would improve the existing unpaved hiking trail connection from the rail corridor and Simpkins Swim Center to upper Twin Lakes State Beach. Therefore, the Project would improve access to Twin Lakes State Beach, which could increase park users. Twin Lakes State Beach provides large open space areas that could accommodate additional users. Although it is estimated there could be an average of 3,500 daily trail users in the Project corridor, only a small percentage of the users would use the improved trail access to upper Twin Lakes State Beach. Therefore, implementation of the Project would not degrade Twin Lakes State Beach, and impacts to the park would be **less than significant**.

There are no other parks that are within the Project corridor. However, there are several parklets and community facilities less than 0.2 mile from the Project corridor that may be visited by trail users. The number of trail users that would be new users of surrounding facilities would be minimal and surrounding parks would not be degraded by the Project. Impacts to existing recreational facilities in the area would be **less than significant**.

Therefore, implementation of the Project would not result in the need for additional recreational facilities or parks, the construction of which could cause significant environmental effects, or result in the degradation of existing park facilities and resources within Twin Lakes State Beach and surrounding parklets and recreational facilities. This impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Impacts to parks from implementation of the Interim Trail would be similar to that discussed above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. The trail alignment would be in the same general location, and the anticipated trail use and number of trail users would be the same as those for the Ultimate Trail Configuration. Implementation of the Interim Trail would not result in the need for additional recreational facilities or parks, the construction of which could cause significant environmental effects, or result in the degradation of existing park facilities and resources within Twin Lakes State Beach and surrounding parklets and recreational facilities. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

The demolition of the Interim Trail and rebuilding the rail line would involve demolishing the trail and associated fencing and guardrails, retaining walls, and other supporting features. Trail users would lose access to the trail during this phase of construction. Therefore, there would be reduced access to and slightly less use of Twin Lakes State Beach, which would also reduce associated degradation of those trails. Therefore, impacts to park facilities and the degradation of existing facilities would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Impacts from construction of the Ultimate Trail Configuration would be the same as described above for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. The Ultimate Trail Configuration would enhance access to Twin Lakes State Beach by improving the existing hiking trail that would provide connectivity for recreational users. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effect of the Interim Trail Parts 1, 2, and 3 would not require additional park facilities and would not degrade existing facilities. Implementation of the Interim Trail would not result in the need for additional recreational facilities or parks, the construction of which could cause significant environmental effects, or result in the degradation of existing park facilities and resources within Twin Lakes State Beach and surrounding parklets and recreational facilities. This impact would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts to park facilities. Under either scenario, the trail would be in the same general location with the same number of estimated trail users that could use surrounding recreational facilities. Under either scenario, the trail would provide additional access to Twin Lakes State Beach park facilities by improving the existing hiking trail and providing a trail to access the park. Impacts for the Project with and without the optional Interim Trail would be **less than significant**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Impacts to recreational facilities associated with the addition of this connection would be slightly higher because this additional connection point could encourage more people to use the trail and slightly increase the number of trail users that would in turn use surrounding recreational facilities. However, the potential increase in number of trail users would be minimal and unlikely to degrade recreational facilities. Impacts to recreational facilities from the East Harbor Connection would be **less than significant**.

Impact PUB-4 THE PROJECT WOULD NOT RESULT IN THE NEED FOR THE CONSTRUCTION OF NEW OR ADDITIONAL HEALTH SERVICE FACILITIES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Impacts related to health service facilities are limited to operational impacts. Construction of the Project would be temporary in nature, and the provision of health service facilities would not be impacted. There would be **no impact** to health service facilities**.** No mitigation is required.

Operation

The Project would not result in an increase in the permanent population that would need healthcare services and thus would not result in the need for new healthcare facilities or the expansion of existing facilities. The Project would result in an increase in the use of the rail corridor by bicyclists, walkers, and runners using the trail for transportation and recreation.

The Project and increased use of other recreation opportunities accessible by Segments 8 and 9 could result in an increase in injuries and/or medical emergencies (e.g., bike accident, sprained ankle). Injuries and/or medical emergencies would be treated by the existing healthcare facilities within the vicinity of the Project corridor, including Dominican Hospital, Watsonville Community Hospital, Doctors on Duty (urgent care facility), Sutter Palo Alto Medical Foundation, and other healthcare facilities in the City and County. However, bicyclists currently using the existing 8-foot-wide two-way bicycle facility located in the roadway along Segment 8 are in proximity to vehicular traffic. Therefore, safety for bicyclists along that stretch of trail would improve with implementation of the Project. The Project would result in a Class I trail that would separate trail users from vehicular traffic. Therefore, it is anticipated that there would be an offset or overall reduction in bicycle/vehicular related injuries. The potential impacts to emergency response providers are addressed above in Impact PUB-1.

Temporary population influxes throughout the County, including the City, are common as the County supports a wide variety of amenities, both constructed and natural, that draw many visitors year-round. The increase in the use of healthcare facilities as a result of the Project would not be substantial enough to require construction of new healthcare facilities, nor would existing facilities need to be expanded, resulting in potential physical effects on the environment. Therefore, impacts would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The impacts from implementation of the Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* because the Interim Trail would not result in an increase in the permanent population that would need healthcare services and thus would not result in the need for new healthcare facilities or the expansion of existing facilities. Like the Ultimate Trail Configuration, the Interim Trail would result in an increase in the use of the rail corridor by bicyclists, walkers, and runners using the trail for transportation and recreation. The Interim Trail and increased use of other recreation opportunities accessible from the trail could result in an increase in injuries and/or medical emergencies. However, there are existing healthcare facilities with adequate capacity to serve injuries and/or medical emergencies. The increase in the use of healthcare facilities as a result of the Interim Trail would not be expected to be substantial enough to require construction of new healthcare facilities, nor would existing facilities need to be expanded, resulting in potential physical effects on the environment. Therefore, impacts would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line would remove the trail the rail bed and re-install the rail tracks/ties on the rail bed. With removal of the trail, there would be no trail users that would require healthcare facilities. Impacts would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration would be the same as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Although there would be an increase in people using the trail in the rail corridor for transportation and recreation, the Ultimate Trail Configuration would not result in an increase in the permanent population that would need healthcare services and thus would not result in the need for new healthcare facilities or the expansion of existing facilities. Impacts would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effect of the Interim Trail Parts 1, 2, and 3 would not result in the need for the construction of new or additional health service facilities. The increase in the use of healthcare facilities as a result of the Interim Trail would not be expected to be substantial enough to require construction of new healthcare facilities, nor would existing facilities need to be expanded, resulting in potential physical effects on the environment. Therefore, impacts would be **less than significant**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts to new healthcare facilities because both scenarios would have the same number of trail users and would be in the same general location. The increase in the use of healthcare facilities would not be expected to be substantial enough to require construction of new healthcare facilities, nor would existing facilities need to be expanded, resulting in potential physical effects on the environment. Impacts for the Proposed Project with and without the optional Interim Trail would be **less than significant**. No mitigation is required**.**

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Impacts to healthcare facilities associated with implementation of this connection could be slightly higher because this additional connection point could encourage more people to use the trail and slightly increase the potential number of trail users that would in turn use healthcare facilities. However, the increase in number of trail users would be minimal, and it is unlikely healthcare facilities would be degraded. Impacts recreational facilities for the East Harbor Connection would be **less than significant**. No mitigation is required.

3.11.5 Summary Comparison

Comparison of Impacts for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
PUB-1. The Project would not result in the need for additional fire protection facilities or emergency medical services response to maintain acceptable service ratios or response times.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
PUB-2. The Project would not result in the need for additional police protection or law enforcement facilities to maintain acceptable service ratios or response times.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
PUB-3. The Project would not result in the need for the construction of new or additional park facilities, nor the degradation of existing facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
PUB-4. The Project would not result in the need for the construction of new or additional health service facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

3.12 Transportation

This section evaluates the potential environmental effects associated with implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* on transportation in the vicinity of the Project corridor. Existing transportation facilities within and near the Project corridor are identified to assess the impacts that the Project could have on the circulation system. Portions of the impact analysis contained herein are based on the Coastal Rail Trail Segments 8 and 9 Traffic Technical Memorandum (Rincon 2022; **Appendix G**). A summary of the potential impacts related to transportation is presented in **Table 3.12-1**.

Table 3.12-1 Summary of Project Impacts on Transportation[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
T-1. The Project would meet the screening criteria set by OPR, Caltrans, City of Santa Cruz, and Santa Cruz County and thus would not conflict or be inconsistent with *CEQA Guidelines*, Section 15064.3(b).	Less than Significant	None Required	Less than Significant
T-2. Neither construction nor operation of the Project would substantially increase hazards due to a geometric design feature or incompatible use.	Less than Significant	None Required	Less than Significant
Beneficial Effect: The Project would provide the option for alternative transportation modes along the Project corridor, resulting in an overall reduction in VMT that would ultimately improve the existing circulation system. Furthermore, the Project would implement high visibility striping and surface improvements along Segment 8, reducing user conflicts along Beach Street where existing pedestrian, bicycle, and vehicular traffic is heavily congested.			

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.12.1 Existing Conditions

Regional Setting

Santa Cruz County (County) contains a diverse multimodal transportation network composed of state highways, local streets and roads, an extensive bus system, specialized transport for older adults and people with disabilities, bikeways, sidewalks, the Santa Cruz Branch Rail Line, and an airport in the City of Watsonville. The County's transportation network facilitates the movement of private automobiles, transit vehicles, bicycles, pedestrians, goods and services, and emergency vehicles (RTC 2022a). The County's main transportation corridors are constrained by the region's physical barriers, including the Santa Cruz Mountains and the Pacific Ocean (Monterey Bay). Overall, the patterns of travel in the County are dependent on the number of people who live, work, and visit the region.

According to the Santa Cruz County Regional Transportation Commission's (RTC's) 2045 Regional Transportation Plan (RTP), transportation through the County is facilitated by a total of 1,064 miles of publicly maintained roadways, including seven state highways: State Routes (SR-) 1, 9, 17, 35, 129, 152, and 236 (RTC 2022a). SR-1 extends through the most heavily populated areas of the region and acts as the County's primary thoroughfare. As such, SR-1 has the highest average daily traffic volume of any local street or highway in the County.

SR-9 is a mountainous roadway that connects the City of Santa Cruz (City) to towns throughout the San Lorenzo Valley and provides an alternate route through the Santa Cruz Mountains to urban centers in Santa Clara County. SR-17 is a mountainous highway that traverses the Santa Cruz Mountains and is the primary connection between Santa Cruz County and Santa Clara County and other parts of the San Francisco Bay Area. SR-35 is often referred to as "Skyline Boulevard" because it follows the ridge of the Santa Cruz Mountains and weaves between Santa Cruz County and Santa Clara County. Due to its scenic vistas, SR-35 sees a high volume of recreational motoring and bicycling use. SR-129 and SR-152 double as main streets through the City of Watsonville. These highways connect Santa Cruz County with neighboring counties to the south and with U.S. Route 101 and the Central Valley to the east. SR-129 is often used for the movement of goods due to its link between Santa Cruz County and U.S. Route 101 since U.S. Route 101 is a major goods movement corridor. Finally, SR-236 is an 18-mile loop connecting SR-9 in Boulder Creek to Big Basin Redwoods State Park (RTC 2022a).

The local street networks throughout Santa Cruz County include approximately 900 miles of roadways, bridges, curbs and gutters, sidewalks, access ramps, bicycle lanes, stop signs, and traffic signals. This local network is a critical component of the region's transportation system, as the majority of travel is done on local streets and roads (RTC 2022a).

The Santa Cruz Metropolitan Transit District (METRO) buses serve approximately 400 miles of roadways throughout the County. METRO provides three primary services: 26 local fixed-route bus services, the SR-17 Express Bus service, and ParaCruz services. METRO also operates four transit centers in the Santa Cruz County area. The SR-17 Express Bus is jointly operated by METRO, Amtrak, and the Santa Clara Valley Transportation Authority, and it provides a connection to the San Jose train station. METRO ParaCruz services provide Americans with Disabilities Act (ADA)-mandated complimentary paratransit service to any destination within Santa Cruz County that is within three-quarters of a mile of an operating bus route. Community Bridges Lift Line, a nonprofit organization, provides similar paratransit services in the region. Santa Cruz County is also connected to Monterey County by the Monterey-Salinas Transit bus service and to other parts of California by Greyhound interregional bus services. Six Park and Ride lots are strategically located throughout the County and provide commuters with pickup spots where they can park their cars during the work or school day to meet a carpool, vanpool, or bus ride. Most facilities are located along highways or near transit centers (RTC 2022a).

The only existing rail line in the County is the 32-mile Santa Cruz Branch Rail Line that extends between the unincorporated communities of Davenport on the north and Pajaro on the south. This rail corridor is owned by the RTC and traverses downtown Watsonville, Aptos Village, Capitola Village, and the Santa Cruz Beach area near downtown Santa Cruz, providing linkages to major activity centers in the region. Currently, freight service only operates on the Santa Cruz Branch Rail Line from the western boundary of the City of Watsonville east to the town of Pajaro just outside the Santa Cruz County line, where it connects to the Union Pacific main line (RTC 2022a). Additionally, the Felton Branch Line extends 8 miles from the unincorporated community of Felton to Center Street in the City of Santa Cruz. Roaring Camp Railroad provides recreational passenger service seasonally (twice daily during summer months) between Felton and the Boardwalk.

There are approximately 223 miles of bicycle lanes and bicycle paths in the County, composed of an estimated 196 miles of Class II or III bike paths and 27 miles of Class I and IV bike paths. These bicycle lanes generally follow the region's primary transportation corridors and can be found on most arterials and collector roads. Sidewalks and other pedestrian facilities are also an important part of the transportation network (RTC 2022a).

As described in Section 1.2.4, *Subsequent Actions and Considerations*, in Chapter 1, *Introduction*, the RTC prepared a Unified Corridor Investment Study (RTC 2019) that includes a comprehensive evaluation of the performance of potential transportation improvements on three critical transportation corridors when designed to function together. The purpose of the study is to identify multimodal transportation investments that would provide for the most effective uses. The three corridors studied include SR 1, Soquel Avenue/Soquel Drive/Freedom Boulevard, and the Santa Cruz Branch Rail Line. The three corridors generally link the communities along the County coast from Davenport through Watsonville (RTC 2019).

Project Corridor Setting

This section includes a description of the local transportation network in the vicinity of the Project corridor.

Road Network

The nearest State Route to the Project is SR-1, which parallels the Project corridor approximately 1.5 miles to the north. SR-1 provides vehicular access to Santa Cruz from the San Francisco Bay to the northwest and Watsonville to the southeast.

West of the SR-1/SR-17 junction, SR-1 generally has two travel lanes in each direction and extends through the City as a surface street (Mission Street) before continuing up the coast as a two-lane highway. East of the SR-1/SR-17 junction, SR-1 generally has two travel lanes in each direction, plus an existing or planned third auxiliary lane in each direction (intended for local access on and off the freeway without entering the main travel lanes).

From SR-1, the following roadways (from west to east) provide vehicular access to the Project corridor:

- Bay Street, which extends south to West Cliff Drive, which extends approximately 650 feet east to the Beach Street/Pacific Avenue roundabout, the westernmost extent of Segment 8
- Ocean Street, which extends south from the SR-1/SR-17 junction to East Cliff Drive, which connects to Riverside Avenue and the Boardwalk (Segment 8) and to Murray Street (beginning of Segment 9)
- Soquel Avenue, which is SR-1Exit 439, extends to Seabright Avenue, 7th Avenue, and 17th Avenue, all of which intersect Segment 9 of the Project corridor

The Project corridor can be accessed from several other local roadways within the City and County road network (refer to **Figure 2-1**).

Project Corridor

From west to east, the Project corridor (Segment 8) extends along Beach Street (bike lanes and sidewalks) to the San Lorenzo River (SLR) Trestle Bridge, which has an existing multi-purpose trail. East of the SLR Trestle Bridge, the Project corridor (Segment 9) follows the Santa Cruz Branch Rail Line corridor, which extends along the north side of Murray Street across the Santa Cruz Harbor on the Woods Lagoon Railroad Bridge. From there, the Project corridor continues along the Santa Cruz Branch Rail Line corridor across 7th Avenue, through upper Twin Lakes State Beach, to the eastern side of 17th Avenue.

As shown on **Figure 2-1** and in **Appendices A.1** and **A.2**, several local roads lead to and intersect with the Project corridor (from west to east): Pacific Avenue, Main Street, Westbrook Street, Cliff Street, Riverside Avenue, Raymond Street, Leibrandt Avenue, Park Place, and 3rd Street to Segment 8 and East Cliff Drive, Murray Street, Cayuga Street, Mountain View Avenue, Mott Avenue,

Seabright Avenue, Watson Street, Bronson Street, Owens Street, 7th Avenue, Live Oak Avenue, El Dorado Avenue, and 17th Avenue to Segment 9.

Traffic Safety

Existing user conflicts within the Project corridor primarily occur in Segment 8 along Beach Street where heavily congested pedestrian, bicycle, and vehicular traffic creates user conflicts due to the Santa Cruz Boardwalk, large parking areas, restaurants, shopping, and beach/coastal access. According to data from the Statewide Integrated Traffic Record System, a total of 16 collisions involving bicyclists or pedestrians occurred between 2017 and 2021 on Beach Street, between the Pacific Avenue roundabout and the SLR Trestle Bridge. User conflicts also exist in Segment 9 along Murray Street, between the SLR Trestle Bridge and the Santa Cruz Harbor, where a total of nine collisions involving bicyclists or pedestrians occurred between 2017 and 2021, as well as at intersections. User conflicts are less common east of the Santa Cruz Harbor where there were only two collisions involving bicyclists or pedestrians between 2017 and 2021; one collision occurred near Eaton Street and 5th Avenue, and one collision occurred near 17th Avenue and Kinsley Street (UC Berkeley 2022).

Public Transit

Several METRO bus routes provide direct access to the Project corridor as follows (from west to east):

- METRO Routes 19 and 20 provide service to a shared transit stop at the intersection of Bay Street and West Cliff Drive, approximately 650 feet south of the Project corridor's westernmost extent (beginning of Segment 8), in the City.
- METRO Route 71, which extends from downtown Santa Cruz to Watsonville, provides service during the summer months to a transit stop at the intersection of Beach Street and Cliff Street, adjacent to the Project corridor (METRO 2022).
- METRO Route 68 provides service to a transit stop at the intersection of Seabright Avenue and Murray Street, adjacent to the Project corridor. Route 68 also provides service to a transit stop at the intersection of Eaton Street and 5th Avenue, approximately 300 feet south of the Project corridor, and to a transit stop at the intersection of 7th Avenue and Dolores Street, approximately 950 feet south of the Project corridor.
- METRO Route 66 provides service to four transit stops along Brommer Street in unincorporated Live Oak (near Sorrento Oaks, Odyssey Court, El Dorado Avenue, and 17th Avenue), approximately 900 feet north of the Project corridor's eastern segment that runs adjacent to Twin Lakes State Beach. METRO Route 66 provides service to two additional transit stops at the intersection of 17th Avenue and Kinsley Street and the intersection of 17th Avenue and Felt Street, located approximately 300 feet north and 575 feet south of the Project corridor's easternmost extent, respectively.

In addition, the southern terminus of the SR-17 Express Bus Route ends at the Downtown Santa Cruz METRO station, located between Pacific Avenue and Front Street, 0.5 mile north of the Project corridor's westernmost extent (Segment 8). Because the SR-17 Express Bus provides a link between Santa Cruz and the San Jose train station, this route ultimately provides access to the Project corridor from the San Francisco Bay Area via public transit.

Rail Operations

The Project corridor includes an active rail line in Segment 8. Roaring Camp Railroad, which provides recreational passenger service from Felton to the Santa Cruz Boardwalk, has an agreement with the

RTC to operate on the portion of the Santa Cruz Branch Rail Line between Center Street and Beach Street seasonally (twice daily during the summer and sometimes during the Christmas holidays). Currently, no regular freight or passenger services occur along the RTC-owned rail line in Segment 9 of the Project corridor. As stated above, currently, freight service only operates on the Santa Cruz Branch Rail Line from the western boundary of the City of Watsonville east to the town of Pajaro just outside the Santa Cruz County line, where it connects to the Union Pacific main line.

Pedestrian and Bicyclist Circulation

Bicycle and pedestrian activity near the Project corridor is congested along Beach Street during the summer season and some holidays, where there is a Class IV cycle track in the roadway and sidewalks alongside the roadway, which lead to the multi-use path across the SLR Trestle Bridge to bicycle lanes and sidewalks on East Cliff Drive and Murray Street.

Pedestrian activity occurs along various parts of the Project corridor. There is substantial pedestrian activity in Segment 8 where the Santa Cruz Wharf, Boardwalk, and Beach are located. Pedestrians often cross Beach Street to access these features, as well as parking, restaurants, shopping, bowling, and the arcade. As such, many intersections along Beach Street feature pedestrian signage and marked crosswalks. Pedestrian activity also occurs in Segment 9, particularly near the Santa Cruz Harbor and on existing trails in Twin Lakes State Beach.

Bicycle activity occurs along various parts of the Project corridor, most notably using the cycle track along Beach Street in Segment 8 and bike lanes along East Cliff Drive, Murray Street, and Eaton Street in Segment 9, as well as the intersections of major cross streets such as Seabright Avenue, 7th Avenue, and 17th Avenue (RTC 2022b). Murray Street currently offers bike lanes from East Cliff Drive to 7th Avenue. From there, the bike lanes continue both north and south along 7th Avenue. The majority of 17th Avenue also features a bike lane that provides a connection to the Simpkins Swim Center and Twin Lakes State Beach. Other roadways in the vicinity of the Project corridor featuring bike lanes include Pacific Avenue, Riverside Avenue, 3rd Street, East Cliff Drive, Seabright Avenue, Mariner Park Way, Lake Avenue, and Brommer Street (RTC 2022b).

3.12.2 Regulatory Setting

This section describes the state, regional, and local plans, policies, and laws relevant to transportation for the Project. There are no relevant federal regulations related to transportation for the Project.

State

Senate Bill 743

Senate Bill (SB) 743 (2013) changed the way that public agencies evaluate the transportation impacts of projects under California Environmental Quality Act (CEQA), recognizing that roadway congestion, while an inconvenience to drivers, is not itself an environmental impact (see California Public Resources Code, Section 21099(b)(2) [“Automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to [CEQA]”].)

Under SB 743, the Governor’s Office of Planning and Research (OPR) established vehicle miles traveled (VMT) as the most appropriate metric to determine the significance of transportation impacts in place of vehicle level of service or related measures thereof. The use of VMT for

determining significance of transportation impacts has become commonplace since the certification of this provision and the release of OPR's Technical Advisory on Evaluating Transportation Impacts in CEQA in December 2018 and, as of July 1, 2020, is the required metric statewide (OPR 2018).

SB 743 provides opportunities to streamline CEQA for qualifying multimodal transportation networks that provide clean, efficient access to destinations and improve public health through active transportation. A multimodal transportation or active transportation project can be exempt from CEQA if it is consistent with a Specific Plan for which an Environmental Impact Report (EIR) was prepared and is also consistent with the use, intensity, and policies of a Sustainable Community Strategy (SCS) or Alternative Planning Strategy that is certified by the California Air Resources Board as meeting its greenhouse gas reduction targets. Furthermore, under the bill, parking impacts are no longer considered significant impacts on the environment for select development projects within infill areas with nearby frequent transit service.

Regional

2045 Association of Monterey Bay Area Governments Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act, also known as SB 375, was passed by the California Legislature in 2008. SB 375 requires each Metropolitan Planning Organization to demonstrate, through the development of an SCS, how its region will integrate transportation, housing, and land use planning to meet greenhouse gas reduction targets set by the state. In 2022, the Association of Monterey Bay Area Governments (AMBAG) adopted the 2045 Metropolitan Transportation Plan/SCS (2045 MTP/SCS). The 2045 MTP/SCS is built on a set of integrated policies, strategies, and investments to maintain and improve the transportation system to meet the diverse needs of the region through 2045. The 2045 MTP/SCS plans more focused growth in high-quality transit corridors and more travel choices, as well as a safe and efficient transportation system with improved access to jobs and education. The AMBAG region strives toward sustainability through integrated land use and transportation planning (AMBAG 2022).

Local

2045 Santa Cruz County Regional Transportation Plan

The 2045 RTP, adopted on June 16, 2022, is intended to guide transportation planning decisions in Santa Cruz County (RTC 2022a). The RTP includes broad transportation goals and policies, a program of short and long-range transportation projects, and a financial plan for funding projects. Goals, targets, and policies included in the 2045 RTP applicable to the Project are listed below:

- **Goal 1.** Establish livable communities that improve people's access to jobs, schools, recreation, healthy lifestyles, and other regular needs in ways that improve health, reduce pollution and retain money in the local economy.
    - **Target 1.A.** Improve people's ability to meet most of their daily needs without having to drive. Improve access and proximity to employment centers.
    - **Target 1.A.1.** Increase the length of urban bikeway miles relative to total urban arterial and collector roadway miles to 85 percent by 2030 and to 100 percent by 2045.
    - **Target 1.C.** Improve the convenience and quality of trips, especially for walk, bicycle, transit, freight, and carpool/vanpool trips.

- **Target 1.C.2.** Improve multimodal network quality for walk and bicycle trips to and within key destinations by increasing the percentage of buffered/separated bicycle and multiuse facilities to 42 percent of bikeway miles by 2030 and to 64 percent by 2045.
- **Target 1.D.** Improve health and reduce greenhouse gas emissions by increasing the percentage of trips made using active transportation options, including bicycling, walking and transit.
- **Policy 1.4.** Transportation Infrastructure: Ensure network connectivity by closing gaps in the bicycle, pedestrian and transit networks.
- **Policy 2.4.** Reduce the potential for conflict between bicyclists, pedestrians, and vehicles.

The 2045 RTP project program list includes the Monterey Bay Sanctuary Scenic Trail Network (MBSST) (Coastal Rail Trail) Segments 8 and 9 between Pacific Avenue in the City of Santa Cruz and 17th Avenue in the County of Santa Cruz (RTC 2022a).

Monterey Bay Sanctuary Scenic Trail Network Master Plan

The MBSST Network Master Plan was adopted in 2013 and identifies the alignment of the 32-mile planned Coastal Rail Trail along the Santa Cruz Branch Rail Line. In the Master Plan, the MBSST network is described as a two-county pedestrian and bicycle pathway system that is intended to establish the continuous alignment. The MBSST network is differentiated into the Coastal Rail Trail portion and associated spur trails. The Coastal Rail Trail portion of the MBSST network is planned within the Santa Cruz Branch Rail Line corridor right-of-way to serve as the trail spine to provide multi-use alternative transportation and coastal access. The network of associated spur trails is intended to connect the spine with other origins, destinations, and activity sites in the region (RTC 2013).

The MBSST Network Master Plan includes design standards for the Coastal Rail Trail within the context of existing physical constraints of the railroad, coastal access requirement, highway, and public street rights-of-way. The Project would consist of Segment 8 and Segment 9 of the planned Coastal Rail Trail described in the MBSST Network Master Plan.

Santa Cruz County General Plan and Local Coastal Program

The Transportation and Circulation Element of the County's General Plan and Local Coastal Program, adopted in 1994, includes objectives and policies that address the bikeway system, pedestrian travel, and roadway capacity (Santa Cruz County 1994). Key policies relevant to the Project are listed below:

- **Objective 3.8a, System Development.** To develop a bikeway network maximizing the safety and convenience of users of all levels of experience within that system. The network should be primarily for commuter travel designed to increase the potential of combining bicycle travel with other forms of transportation and also include the opportunity for recreational use.
- **Objective 3.8b, Coordination.** To coordinate the County's bikeway planning efforts with local cities and adjacent counties and other agencies to provide an integrated regional bikeway system and to actively seek all available means of financing bikeways including state and federal grants.
- **Policy 3.8.5, Regional Continuity.** Coordinate with other jurisdictions to adopt a system of bikeways that is functional throughout the County and region.
- **Policy 3.8.7, Recreation.** Plan bicycle routes to facilitate access to recreational areas such as regional parks, beach areas, and major tourist commercial/recreational facilities. Promote recreational bicycle routes to promote "eco-tourism."

- **Policy 3.8.8, Trail Network.** Plan, develop, and maintain a network: of countywide regional trails in both incorporated and unincorporated areas, through cooperative efforts with cities, property owners, and other interested persons in Santa Cruz County.
- **Policy 3.8.9, Right-of Way.** Utilize existing and abandoned public rights-of-way along flood control channels, parks, and roads, and utility and railroad rights-of-way wherever possible, and where consistent with the MPCB [Master Plan of County Bikeways].
- **Objective 3.10, Pedestrian Travel.** To encourage pedestrian travel as a viable means of transportation, by itself and in combination with other modes, to achieve at least 7% of all trips through walking, by increasing and improving pedestrian facilities, particularly in urban areas and reducing the conflicts between pedestrians and other modes of travel.
- **Policy 3.10.8, Americans with Disabilities Act (ADA) Requirements.** Americans with Disabilities Act (ADA) Requirements Incorporate ADA standards in design of new projects and reconstruction where applicable.

Santa Cruz County Municipal Code

Santa Cruz County Code, Title 9, focuses on regulations and requirements for roads, vehicles, and traffic. Specifically, Chapter 9.08 establishes speed limits for certain roadways; Chapter 9.16 designates limited access throughfares that are not intended for vehicular travel and are instead available for limited purposes, such as bicycle paths; Chapter 9.36 through Chapter 9.46 establish a range of parking regulations; Chapter 9.52 establishes regulations for the operation of off-road motor vehicles on both public and private property; and Chapter 9.54 establishes regulations for the operation of motorized bicycles and motorized scooters.

Santa Cruz County Active Transportation Plan

The Santa Cruz County Active Transportation Plan (ATP) was adopted by the County in May 2022 as an update to the 2011 Santa Cruz County Bicycle Plan. The ATP is intended to provide community-identified needs and recommendations for infrastructure projects or programs that support walking and bicycling in unincorporated Santa Cruz County. Overall, the ATP aims to support a healthy community, improve affordable transportation options for low-income and vulnerable residents, and help the County achieve statewide goals to address climate change by reducing VMT (Santa Cruz County 2022). Other relevant regional documents were consulted as part of the ATP development to ensure consistency with their recommendations, such as MBSST Network Master Plan. The ATP details the Coastal Rail Trail as a current project consisting of a shared-use path that will span the County from Davenport to the Monterey County line and describes the environmental, design, and right-of-way work for Segment 9 as currently in progress. The ATP also shows the MBSST and the Coastal Rail Trail as partially completed and partially planned in its Short-Term Corridor Recommendations (Santa Cruz County 2022).

City of Santa Cruz General Plan and Local Coastal Program

The City's General Plan and Local Coastal Program is a comprehensive long-range planning document that describes the City's philosophy of growth and preservation, highlights what is important to the community, and identifies where specific land use types should be developed (City of Santa Cruz 2012). The *Mobility* chapter of the City's General Plan, which corresponds to the required Circulation Element, sets forth goals, policies, and actions to ease the ability of people and vehicles to move around, out of, and into the City. Key goals, policies, and actions relevant to the Project are listed below:

- **Action M1.1.2.** Connect activity centers with pedestrian and bicycle paths.
- **Action M2.3.1.** Design for and accommodate multiple transportation modes.
- **Goal M4.** A citywide interconnected system of safe, inviting, and accessible pedestrian ways and bikeways.
- **Action M4.2.3.** Facilitate bicycling connections to all travel modes.
- **Policy M4.4.** Assure a high level of bicycle user amenities.
- **Action M4.5.1.** Design and also modify intersections using striping, pedestrian crossing signs, pedestrian islands, and pedestrian-friendly signal phasing.

City of Santa Cruz Municipal Code

The City's Municipal Code, Title 10, focuses on regulations and requirements for vehicles and traffic, while Title 15 focuses on regulations and requirements for streets and sidewalks. Specifically, Chapter 10.36 allows the City Traffic Engineer to establish marked crosswalks at intersections within the central traffic district and at intersections outside the central traffic district where there are potential user conflicts to pedestrians crossing the roadway; Chapter 10.40 establishes a variety of stopping, standing, and parking regulations; Chapter 10.46 identifies the Citywide Trip Reduction Program to ensure that the City plays a role in promoting alternative transportation use; Chapter 10.48 regulates truck routes and prohibits commercial vehicles from using certain City streets; Chapter 10.60 establishes speed zones for certain roadways; Chapter 10.68 regulates bicycle usage and parking on City streets and sidewalks; and Chapter 15.20 regulates the standards and specifications of all sidewalks within the City.

City of Santa Cruz Active Transportation Plan

The City's ATP was adopted in 2017 and acts as a guide for active mobility within and around the City. The ATP prioritizes a set of connected projects that are intended to increase active transportation opportunities and make it safer and more convenient for people to walk, bike, and use active modes once fully implemented (City of Santa Cruz 2017). The overarching goal of the City's ATP is to develop and maintain a safe, comprehensive, and connected bicycle and pedestrian network. Associated objectives and policies relevant to the Project are listed below:

- **Objective 1, Comprehensive Bicycle and Pedestrian Network.** Establish a comprehensive bicycle and pedestrian transportation system that is integrated with the existing City network and connected to the countywide network.
    - **Policy 1.1.** Provide a complete bicycle and pedestrian network among residential areas, downtown and major activity centers.
    - **Policy 1.4.** Determine appropriate locations for bicycle and pedestrian access to and along the Monterey Bay Sanctuary Scenic Trail.
    - **Policy 1.5.** Build on Santa Cruz's existing partnership with the Santa Cruz County Regional Transportation Commission to ensure that the City's Active Transportation Plan is consistent with countywide transportation planning efforts, including the Regional Transportation Plan, the Monterey Bay Sanctuary Scenic Trail, and the Bike Route Signage Program.
- **Objective 4, Enhanced Safety and Security for Active Transportation Users.** Create pedestrian and bicycle networks that are, and are perceived to be, safe and secure.
    - **Policy 4.2.** Focus on improving bike and pedestrian safety at intersections using best practices and emerging tools.

Completion of the MBSST within City limits is identified as a key improvement type in the City's ATP. In addition, the ATP's Projects List includes the entire length of the MBSST Network through the City (City of Santa Cruz 2017).

3.12.3 Methodology and Significance Thresholds

Methodology

This analysis considers the potential impacts of the Project on transportation resources along the Project corridor. Portions of this analysis are based on the technical guidance described below and the Coastal Rail Trail Segments 8 and 9 Traffic Technical Memorandum (Rincon 2022; **Appendix G**).

Governor's Office of Planning and Research Technical Advisory

Following the adoption of SB 743 in 2013, the OPR released technical guidance on addressing VMT in CEQA documents in its Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018). The OPR's technical guidance identifies several criteria that may be used to identify types of projects that are unlikely to have a significant VMT impact and can thus be "screened" from further analysis. The OPR recommends a per-capita or employee VMT that is 15% below that of existing development as an achievable target for a variety of project types (OPR 2018). The OPR also recommends several screening thresholds for land use projects, including the following:

- **Small Project Screening:** Projects that generate or attract fewer than 110 vehicular trips per day.
- **Map-Based Screening:** Projects located in areas of low VMT that incorporate similar features.
- **Transit Screening:** Projects located within one-half mile of a major transit stop, or a stop along a high-quality transit corridor, pursuant to state definitions for such facilities, unless any of the following factors are exhibited by the project:
    - Floor Area Ratio (FAR) of less than 0.75
    - Inconsistent with the applicable SCS
    - Provides more parking than required by the jurisdiction
    - Replaces affordable housing with a fewer number of moderate- or high-income residential units
- **Retail Project Screening:** Projects that are less than 50,000 square feet shall be presumed to have a less than significant VMT impact if the retail is locally serving.
- **Affordable Housing Screening:** Projects with 100 percent affordable housing.

The OPR also provides a list of projects that are not likely to lead to a substantial or measurable increase in vehicle travel and do not require an induced travel analysis, including the following:

- Rehabilitation, maintenance, replacement, safety, and repair projects designed to improve the condition of existing transportation assets (e.g., highways; roadways; bridges; culverts; Transportation Management System field elements such as cameras, message signs, detection, or signals; tunnels; transit systems; and assets that serve bicycle and pedestrian facilities) and that do not add additional motor vehicle capacity
- Roadside safety devices or hardware installation such as median barriers and guardrails
- Roadway shoulder enhancements to provide "breakdown space," dedicated space for use only by transit vehicles, to provide bicycle access, or to otherwise improve safety, but which will not be used as automobile vehicle travel lanes

- Installation, removal, or reconfiguration of traffic lanes that are not for through traffic, such as left, right, and U-turn pockets, two-way left-turn lanes, or emergency breakdown lanes that are not utilized as through lanes
- Addition of roadway capacity on local or collector streets provided the project also substantially improves conditions for pedestrians, cyclists, and, if applicable, transit
- Grade separation to separate vehicles from rail, transit, pedestrians or bicycles, or to replace a lane in order to separate preferential vehicles (e.g., HOV, HOT, or trucks) from general vehicles
- Installation of traffic metering systems, detection systems, cameras, changeable message signs, and other electronics designed to optimize vehicle, bicycle, or pedestrian flow
- Timing of signals to optimize vehicle, bicycle, or pedestrian flow
- Addition of new or enhanced bike or pedestrian facilities on existing streets/highways or within existing public rights-of-way
- Addition of Class I bike paths, trails, multi-use paths, or other off-road facilities that serve non-motorized travel

California Department of Transportation Guidance

The California Department of Transportation (Caltrans) released its own framework for transportation analysis in September 2020 to guide the implementation of SB 743 (Caltrans 2020a). The framework heavily relies on the OPR's recommendations. However, according to the guidance document, the use of VMT as the CEQA transportation metric would impact only capacity-increasing projects. If a project is unlikely to induce travel, then a qualitative narrative can be presented to screen out the project from further analysis. A quantitative analysis would not be warranted for the Project because the type of project is expected to decrease or have no impact on VMT.
Caltrans' Transportation Impact Study Guide similarly relies on the OPR's recommendations. The Transportation Impact Study Guide also includes bicycle and pedestrian facilities improvements as examples of mitigation to reduce project VMT (Caltrans 2020b).

City of Santa Cruz and County of Santa Cruz Vehicle Miles Traveled Guidelines

The County has adopted their VMT guidelines within the SB 743 Implementation Guidelines for the County of Santa Cruz, Analyzing Vehicle Miles Traveled for CEQA Compliance (Santa Cruz County 2020). The City of Santa Cruz has adopted the County's VMT guidelines, including additional screening criteria, in the SB 743 Implementation Guidelines City of Santa Cruz (June 2022). Although these guidelines closely follow the OPR's recommendations, they include additional screening criteria requirements specific to the City and/or County, as follows:

- Any projects that meet the OPR's small project screening criteria must also be consistent with the SCS as determined by Santa Cruz County.
- Projects in the City that meet the OPR's transit screening criteria. There are no existing major transit stops in the unincorporated County, so no projects in the unincorporated County would meet the transit screening criteria.
- Local serving retail screening criteria, whereby no single store on site exceeds 50,000 square feet and is local serving as determined by the City or County.
- Affordable Housing screening criteria, which does not need to be 100% but is determined by the City or County Planning Department.
- Local essential service screening criteria, whereby the project is a daycare center, public K–12 school, police or fire facility, local serving medical/dental office, government office, or supportive housing.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, explains that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of transportation and circulation along with the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For the purposes of this EIR, a significant transportation impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
B. Conflict or be inconsistent with *CEQA Guidelines* Section 15064.3, subdivision (b).
C. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
D. Result in inadequate emergency access.

As described in Section 3.12.2, *Regulatory Setting*, the Project is identified in the RTC's 2045 RTP and MBSST Network Master Plan, County's ATP, and City's ATP (RTC 2013, 2022a; Santa Cruz County 2022; City of Santa Cruz 2017). Furthermore, the Project would be consistent with the goals and policies of both the County's General Plan and the City's General Plan (Santa Cruz County 1994; City of Santa Cruz 2012). Therefore, impacts related to conflicts with a program, plan, ordinance, or policy addressing the circulation system (Threshold A) are not included in the analysis below. Furthermore, the Central Fire District of Santa Cruz County indicated that the Project corridor would allow sufficient emergency access for responders and first response equipment (Mack 2022). Therefore, impacts related to inadequate emergency access (Threshold D) are similarly not included in the analysis below. Additional analysis related to Thresholds A and D and these less than significant transportation impacts are included in Section 3.15, *Effects Found to be Less than Significant*.

3.12.4 Project Impact Analysis

Threshold B:	Conflict or be inconsistent with *CEQA Guidelines* section 15064.3, subdivision (b).

Impact T-1 THE PROJECT WOULD MEET THE SCREENING CRITERIA SET BY OPR, CALTRANS, CITY OF SANTA CRUZ, AND SANTA CRUZ COUNTY AND THUS WOULD NOT CONFLICT OR BE INCONSISTENT WITH *CEQA GUIDELINES*, SECTION 15064.3(B). (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

Construction

Transportation impacts during project construction would be primarily associated with the presence of large construction equipment, machinery, worker vehicles, and truck deliveries accessing the Project corridor. It is estimated that a total of five round trips would be required per day for soil hauling during excavation, one round trip would be required per day for the import of materials during trail construction, two round trips would be required per day for the import of materials during trail paving, and five round trips would be required per day for watering during all phases of construction.

These estimates were developed for the air quality analysis (refer to **Appendix D**, Air Quality and GHG Modeling Assumptions), based on the construction estimates presented in Section 2.6, *Project Construction*, in Chapter 2, *Project Description*. Truck activity and haul routes associated with project construction would be limited to arterial and collector roads where feasible. Any increase in the number of trips taken on roadways in the vicinity of the Project corridor, as well as any disrupted pedestrian and bicycle access to the coast, due to construction of the Project would be minimal and temporary in nature and would cease to occur once the construction period is over. Construction impacts related to VMT would be **less than significant**.

Operation

Operation of the Project would provide a bicycle and pedestrian system inaccessible to unauthorized vehicular traffic. There would be periodic inspections and maintenance of the trail, as well as emergency vehicle access, which would be incorporated into the City's and County's facility maintenance schedule and would not add substantial vehicle trips in the vicinity of the Project corridor.

Development of the Project would ultimately reduce VMT in the vicinity of the Project corridor, as the trail would provide an alternative means of travel. Thus, the Project would result in an overall improvement to the existing circulation system due to the reduction in vehicular traffic and option for alternative transportation modes. Furthermore, the Project does not include the addition of parking or bathroom facilities, both of which could generate additional trips to the Project corridor. Although the Project would modify the existing parking at the Simpkins Swim Center, these modifications would include the conversion of three existing standard parking stalls to two ADA parking stalls, ultimately eliminating one parking stall. Therefore, the Project would not induce travel or result in an increase in VMT. As the Project would not increase total daily vehicle trips during operation, the Project would meet the OPR, City, and County small project screening criteria of fewer than 110 vehicular trips per day. Similarly, according to Caltrans guidance, the Project would not require additional CEQA transportation analysis since the Project would not induce travel.

Segment 9 would be in the City and County and subject to the City's and County's VMT guidelines. Although the Project is considered a small project pursuant to OPR Guidelines, the Project would also need to be consistent with AMBAG's SCS to fulfill the County-specific small project screening criteria. As described in **Appendix G** (Traffic Technical Memorandum), the Project is consistent with AMBAG's SCS because the Project would reduce vehicle travel on area roadways. Trip reduction would help to achieve Targets 1A through 1F in the SCS, supporting Goal 1 to establish livable communities in ways that improve health and reduce pollution.

The Project is also consistent with the OPR's examples of projects that do not require induced travel analysis. Specifically, the bicycle and pedestrian system proposed by the Project would be located mainly within existing rights-of-way (except for minor improvements at the trail connection to Twin Lakes Stake Park and Simpkins Swim Center), would be a Class I trail, and would serve non-motorized travel. Furthermore, the minor roadway improvements proposed on Murray Street at the Seabright Avenue intersection would increase bicycle safety (refer to **Appendix G**, Traffic Technical Memorandum, for a detailed comparison of project consistency with OPR guidance).

Although evaluation of effects on parking are not required by CEQA, it is anticipated the project would not have a substantial or adverse effect on existing parking. It is anticipated that the trail would be used primarily by local residents for transportation and recreation, and most would bike or walk from their residence. For those who drive to the trail, there are several places to park along the alignment, including several large public lots (e.g., near the Boardwalk, Santa Cruz Harbor,

Simpkins Swim Center) and informal and on-street parking at various locations (e.g., along Watson Street and residential streets).

Overall, the Project would be consistent with VMT screening criteria set forth by the OPR, Caltrans, City, and County. Specifically, the Project would be consistent with the small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with the SCS, and would satisfy the conditions of several OPR example projects that would not require induced demand analysis. Therefore, operational impacts related to VMT would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

The Interim Trail would replace the existing rail line with a trail. Accordingly, Part 1 of implementing the optional Interim Trail includes demolition of the rail and construction of the Interim Trail on the rail line. It is estimated that a total of four round trips would be required per day for soil hauling during excavation, one round trip would be required per day for the import of materials during trail construction and paving, and five round trips would be required per day for watering during all phases during demolition of the rail. These estimates were developed for the air quality analysis (refer to **Appendix D**) based on the construction estimates presented in Section 2.6. Any increase in the number of trips taken on roadways in the vicinity of the Project corridor due to demolition of the rail or construction of the Interim Trail would be minimal and temporary in nature and would cease to occur once the construction period is over. Therefore, construction VMT impacts would be **less than significant**.

The Project would not include any restrooms or additional parking that may induce new vehicle trips. Therefore, similar to the Ultimate Trail Configuration as described under Impact T-1, operation of the Interim Trail would not result in an increase in VMT and rather would result in an overall improvement to the existing circulation system due to the reduction in vehicular traffic and option for alternative transportation modes. Implementation of the Interim Trail would be consistent with VMT criteria set forth by the OPR, Caltrans, City, and County. Specifically, the Interim Trail would be consistent with the small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with AMBAG's SCS for the same reasons as the Project, and would satisfy the conditions of several OPR example projects that would not require induced demand analysis. Therefore, impacts related to VMT during implementation of the Interim Trail would be **less than significant.** No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Part 2 of implementing the optional Interim Trail includes demolition of the Interim Trail and rebuilding of the rail line. It is anticipated that a total of two round trips would be required per day for asphalt, base rock, and soil hauling during excavation, one round trip would be required per day for the import of materials during trail construction and paving, and five round trips would be required per day for watering during all phases during reconstruction of the rail line. Any increase in the number of trips taken on roadways in the vicinity of the Project corridor due to demolition of the Interim Trail or reconstruction of the rail line would be minimal and temporary in nature and would cease to occur once the demolition and construction periods are over. Removal of the Interim Trail would temporarily remove the option for active transportation along the Project corridor. Demolition of the Interim Trail and rebuilding of the rail line would therefore revert VMT in

the vicinity of the Project corridor similar to existing conditions until the trail would be rebuilt, as described under *3) Construction of the Ultimate Trail Configuration* (Part 3) below. The increase in VMT would be similar to existing conditions in the City and County because there is currently no trail along the Santa Cruz Branch Rail Line corridor. Demolition of the Interim Trail and rebuilding of the rail line would be consistent with VMT criteria for small projects set forth by the OPR, Caltrans, City, and County. The small project screening criteria applies to projects that would generate fewer than 110 vehicular trips per day, would not induce travel, and would be consistent with AMBAG's SCS. Demolition activities would facilitate the construction of the Ultimate Trail Configuration, which would permanently reduce vehicle travel on area roadways. Therefore, impacts related to VMT during demolition of the Interim Trail and rebuilding of the rail line would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

The potential impacts for constructing the Ultimate Trail Configuration as Part 3 of implementing the Interim Trail would be substantially similar as described above for the Ultimate Trail Configuration. Refer to the discussion for Impact T-1, under *Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)*.

Construction of the Ultimate Trail Configuration would result in a temporary increase in VMT due to large construction equipment, machinery, worker vehicles and truck deliveries accessing the Project corridor and surrounding area. The number of round trips anticipated during construction of the Ultimate Trail would be the same as the number of trips identified above for the Ultimate Trail Configuration. Similarly, any increase in the number of trips taken on roadways in the vicinity of the Project corridor due to construction of the Project would be minimal, temporary in nature, and would cease to occur once the construction period is over. Construction VMT impacts would be **less than significant**. No mitigation is required.

Operation of the Ultimate Trail would not result in an increase in VMT. Rather, operation of the Ultimate Trail would result in an improvement to the existing circulation system due to the reduction in vehicular traffic and option for alternative transportation modes. Overall, the Ultimate Trail Configuration would be consistent with VMT screening criteria set forth by the OPR, Caltrans, City, and County. Specifically, both the Interim Trail and the Ultimate Trail Configuration would be consistent with the small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with the SCS for the same reasons as the Ultimate Trail Configuration, and would satisfy the conditions of several OPR example projects that would not require induced demand analysis. Therefore, impacts related to VMT during construction of the Ultimate Trail would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of implementing the Interim Trail (Parts 1, 2, and 3) would result in an overall increased amount of construction-related traffic due to the two additional construction phases associated with the optional Interim Trail. However, the three construction phases would occur over three separate timelines, and construction trips associated with the three larger phases would be distributed over time. As discussed in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, it is estimated for the purposes of analysis that the three construction phases would occur between 2025 and 2027, 2053 and 2055, and 2056 and 2060. Any increase in the number of trips taken on roadways in the vicinity of the Project corridor during any of the construction phases associated with the optional Interim Trail would be minimal and temporary in nature and would

cease to occur once the construction period is over. Operation of the optional Interim Trail would reduce VMT in the Project region because the Interim Trail would result in development of a trail that would reduce overall vehicle trips by increasing opportunities for active transportation. Implementation of the Interim Trail would meet criteria set forth by the OPR, Caltrans, City, and County. Specifically, the Interim Trail would be consistent with the small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with the SCS for the same reasons as the Project, and would satisfy the conditions of several OPR example projects that would not require induced demand analysis. Therefore, the combined impacts related to VMT would be **less than significant**.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Construction of the Proposed Project with the optional Interim Trail would result in a greater amount of truck trips than construction of the Proposed Project without implementing this optional first phase due to the increased amount of construction-related traffic associated with the two additional construction phases. However, any increase in the number of trips on roadways in the vicinity of the Project corridor during the two additional construction periods would be minimal and temporary in nature and would cease to occur once the construction periods are over. Operation of the Proposed Project, both with and without the optional Interim Trail, would provide a regional trail and thus would reduce vehicle trips by providing opportunities for active transportation. Additionally, the Proposed Project with and without the optional Interim Trail would meet the screening criteria from the OPR, Caltrans, City, and County. Therefore, impacts related to VMT for the Proposed Project, with and without the optional Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. VMT impacts associated with implementation of this connection would be similar to the impacts described above for both the Ultimate Trail Configuration and the optional Interim Trail. Specifically, the East Harbor Connection would be consistent with the small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with the SCS for the same reasons as the Project, and would satisfy the conditions of several OPR example projects that would not require induced demand analysis. Therefore, impacts related to VMT for the East Harbor Connection would also be **less than significant**.

Threshold C:	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact T-2 NEITHER CONSTRUCTION NOR OPERATION OF THE PROJECT WOULD SUBSTANTIALLY INCREASE HAZARDS DUE TO A GEOMETRIC DESIGN FEATURE OR INCOMPATIBLE USE. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Construction of the Project could introduce a temporary hazard due to the potential for conflict between construction vehicles and existing traffic (vehicular, bicycle, pedestrian), and due to potential temporary lane closures that could occur periodically during project construction (e.g.,

constructing the trail's roadway crossings). Along Segment 8, pedestrians would be detoured onto the Boardwalk path or to the sidewalk on the north side of Beach Street. Along Segment 9, pedestrian traffic would be detoured to the opposite side of the roadway where shoulder work would occur, such as along the intersections with Mott Avenue, Seabright Avenue, 7th Avenue, or 17th Avenue. Construction-related closures on Segment 8 would not result in vehicle detours but may require closure of one lane on Beach Street while working on improvements. Bicycle and vehicle traffic would co-exist along Segment 8 on Beach Street with "Bike May Use Full Lane" signs for eastbound cyclists. Westbound cyclists would be detoured to Third Street and Pacific Avenue. Similar detours or "Bikes May Use Full Lane" signage would occur along Segment 9 where intersection and shoulder work occurs. However, construction truck activity and haul routes would be limited to arterial and collector roads where feasible. Furthermore, construction signage and a flagger would be present as needed at the location of any lane closure or substantial construction equipment or activity, which would maintain public safety while facilitating the necessary equipment and vehicular access to the Project corridor. Construction activities are not anticipated to result in any long-term road or lane closures. Construction staging, equipment staging, and stockpiling would take place on existing disturbed or paved areas within the Santa Cruz Branch Rail Line corridor right-of-way. Other potential staging areas could include vacant land uses in the vicinity of the Project corridor, as described in Chapter 2. All equipment and materials would be stored, maintained, and refueled in clearly defined and designated portions of the staging areas in accordance with permit requirements. Construction staging would be temporary in nature and any equipment utilized during construction would be removed after completion of the Project. Therefore, construction impacts related to hazards or incompatible uses would be **less than significant**. No mitigation is required.

Operation

As described in Section 3.12.1, *Existing Conditions*, existing user conflicts occur near the Project corridor along Beach Street where pedestrian, bicycle, and vehicular traffic is congested during certain times of the year. The improvements proposed along Segment 8 would reduce these conflicts with implementation of more high visibility striping and surface improvements for the existing cycle track and crosswalks, resulting in an overall Project benefit. Additionally, the Project would include new "curb" separators (3 to 6 inches high) between the existing cycle track and vehicular travel lanes. Other roadway improvements proposed as part of the Project include the addition of a dedicated right-turn lane from westbound Murray Street to northbound Seabright Avenue, which would be anticipated to maintain traffic flow with the new bike and pedestrian crossing of Seabright and reduce vehicular hazards at the intersection.

Operation of the Project could affect vehicular, bicycle, and pedestrian safety at roadway crossings. A variety of design features have been incorporated into the Project for safety and to reduce the potential for user conflicts. Specifically, the roadway crossing at Seabright Avenue would include interconnected traffic signals specific to trail users and chicanes[1] to slow trail users before the intersection. Chicanes would also be incorporated at the 7th Avenue roadway crossing to ensure safety for users approaching the intersection. Rectangular rapid-flashing beacons would be placed in advance of the trail crossing in each direction on 7th Avenue and 17th Avenue to warn vehicular drivers of the potential for bicyclist and pedestrian crossings; the crossing at 17th Avenue would also feature a raised median in the center of the road flanking the trail to provide a pedestrian and

[1] Curves added by design.

bicycle refuge. In addition, bulb-outs would be located along Mott Avenue to extend the sidewalk into the parking lane to provide additional pedestrian space and visibility.

In addition to the design features described above, the Project would include other safety features to keep trail users from conflicts along the railway and adjacent roadways. Retaining walls would be located in several locations along the alignment, as described in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*, and would provide the required safety distance between the trail and existing rail line. Fencing and guardrails would be installed along the sides of bridges and other areas along the trail alignment for safety and security, and safety fencing may be installed in Segment 9 to separate trail users from the rail, as needed. Overall, the implementation of such project safety design features would minimize potential operational impacts related to user conflicts, and impacts would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the Interim Trail would require the removal of the rails and ties from just east of the SLR Trestle Bridge to the east side of 17th Avenue. During the removal process, heavy equipment and hauling trucks would be limited to arterial and collector roads where feasible, and construction signage and a flagger would be present as needed at the location of any lane closure to maintain public safety. Construction of the Interim Trail after removal of the rail line would be similar to construction of the Ultimate Trail, as described above. Specifically, construction truck activity and haul routes would be limited to arterial and collector roads where feasible, and construction signage and flaggers would be present at the location of any lane closure to maintain public safety as needed. Operation of the Interim Trail could affect vehicular, bicycle, and pedestrian safety at roadway crossings. However, the optional Interim Trail would include similar safety design features as described for the Ultimate Trail Configuration above, minimizing the potential for user conflicts. Therefore, impacts related to user conflicts during implementation of the Interim Trail would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail would result in removal of the trail and reconstruction of the rail line. Removal of the Interim Trail would include the demolition and removal of paving, fiberglass panels, retainer curbs, fencing, benches, and signage throughout the trail alignment. As such, demolition of the Interim Trail and reconstruction of the rail line would result in an increase in the presence of heavy equipment and hauling trucks on public roadways in the vicinity of the Project corridor, which could temporarily increase user conflicts. These impacts would be similar to the impacts described above for implementation of the Interim Trail. Truck activity and haul routes associated with demolition and construction activities would be limited to arterial and collector roads, and construction signage and flaggers would be present at the location of any lane closure to maintain public safety as needed. Therefore, impacts related to user conflicts during demolition of the Interim Trail would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

The potential impacts for constructing the Ultimate Trail Configuration as Part 3 of implementing the Interim Trail would be substantially similar as described above for the Ultimate Trail Configuration.

Construction of the Ultimate Trail Configuration could create temporary user conflicts between construction vehicles and existing traffic and due to temporary lane closures. Construction truck activity and haul routes would be limited to arterial and collector roads, and construction signage and flaggers would be present at the location of any lane closure to maintain public safety as needed. Therefore, impacts related to user conflicts during construction of the Ultimate Trail would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of the Interim Trail (Parts 1, 2, and 3) would introduce a greater number of user conflicts in the vicinity of the Project corridor due to the increased but temporary presence of trucks and heavy equipment on local roadways because of the two additional phases of project construction. However, construction truck activity and haul routes during all phases would be limited to arterial and collector roads, and construction signage and flaggers would be present at the location of any lane closure to maintain public safety as needed. Furthermore, the three phases associated with the optional Interim Trail would take place over three separate timelines, and user conflicts associated with these phases would be distributed between 2025 and 2027, 2053 and 2055, and 2056 and 2060. Operation of the Interim Trail (Part 1) and the Ultimate Trail Configuration (Part 3) would include the same safety design features as described for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, eliminating the potential for user conflicts during operation. Further, the Ultimate Trail Configuration includes safety fencing to separate trail users from the rail, as needed, so if and when there is rail service, operation of the Project would not result in user conflicts due to incompatible use. Therefore, the combined impacts related to user conflicts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

Construction of the Project with the optional Interim Trail would result in an increased number of user conflicts compared to construction of the Project without the optional first phase due to the increased but temporary presence of trucks and heavy equipment on local roadways during the two additional construction phases. The potential user conflicts associated with the implementing the three parts of the optional Interim Trail would take place over three separate time frames rather than all at once. Furthermore, construction conflicts associated with the Project, both with and without the optional Interim Trail, would be minimized by the presence of construction signage and flaggers as needed at any lane closures or where there is substantial construction activity, and operational conflicts would be minimized by safety design features incorporated into the Project. Therefore, impacts related to conflicts from the Project with and without the optional Interim Trail would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Impacts related to conflicts associated with implementation of this connection would be similar to the impact described above for the Ultimate Trail Configuration and the optional Interim Trail due to the temporary presence of trucks and heavy equipment on local roadways. Truck activity and haul routes for heavy equipment would be limited to arterial and collector roads, and construction signage and flaggers would be present at the location of any lane closure to maintain public safety as needed. Therefore, impacts related to conflicts for the East Harbor Connection would also be **less than significant**. No mitigation is required.

3.12.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
T-1. The Project would meet the screening criteria set by OPR, Caltrans, City of Santa Cruz, and Santa Cruz County and thus would not conflict or be inconsistent with *CEQA Guidelines*, Section 15064.3(b).	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
T-2. Neither construction nor operation of the Project would substantially increase hazards due to a geometric design feature or incompatible use.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

PS = Potentially Significant

SU = Significant & Unavoidable

MM = Mitigation Measure

3.13 Tribal Cultural Resources

This section includes an analysis of potential impacts to tribal cultural resources based on the results of consultation with local California Native Americans. This work is conducted pursuant to Assembly Bill (AB) 52, which serves to increase the involvement of native peoples in California Environmental Quality Act (CEQA) analytical work. Potential impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* related to tribal cultural resources are presented in **Table 3.13-1**.

Table 3.13-1 Summary of Project Impacts on Tribal Cultural Resources

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
TCR-1. The Project may cause a substantial adverse change in the significance of a tribal cultural resource.	Potentially Significant	TCR-1a, TCR-1b	Less than Significant

[a] The impacts and mitigation measures apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.13.1 Existing Conditions

Ethnographic Setting

The Project corridor lies within an area traditionally occupied by the Ohlone (or Costanoan) people. Ohlone territory extends along the California coast from the point where the San Joaquin and Sacramento Rivers merge into the San Francisco Bay to Point Sur. Their inland boundary was limited to the interior Coast Ranges (Kroeber 1925: 462). The Ohlone language belongs to the Penutian family, with several distinct dialects throughout the region (Kroeber 1925:462). It is divided into eight regional dialects: Karkin, Chochenyo, Ramaytush, Awaswas, Taymen, Mutsun, Rumsen, and Chalon (Jones 2015), with the Project corridor being located within the areas of Awaswas speaking Uypi tribes (Kroeber 1925:465; Milliken et al. 2009: 138).

The pre-contact Ohlone were semi-sedentary, with a settlement system characterized by base camps and seasonal reserve camps composed of tule reed houses with thatched roofs made of matted grass (Schick 1994; Skowronek 1998). Just outside base camps, large sweat houses were built into the ground near stream banks and used for spiritual ceremonies and possibly hygiene (Schick 1994; Jones 2015). Villages were divided into small polities, each of which was governed by a chief responsible for settling disputes, acting as a war leader during times of conflict, and supervising economic and ceremonial activities (Skowronek 1998; Kroeber 1925:468). Social organization appeared flexible to ethnographers and any sort of social hierarchy was not apparent to mission priests (Skowronek 1998).

Archaeological investigations inform Ohlone mortuary rituals. Cemeteries were set away from villages and visited during the annual Mourning Anniversary (Leventhal and DiGiuseppe 2009). Ceremonial human grave offerings might include *Olivella* beads, as well as tools like drills, mortars, pestles, hammerstones, bone awls, and utilized flakes (Leventhal and DiGiuseppe 2009). Ohlone mythology included animal characterization and animism, which was the basis for several creation narratives. Ritually burying of animals, such as a wolf, squirrel, deer, mountain lion, gray fox, elk,

badger, grizzly bear, blue goose, and bat ray, was commonly practiced. Similar to human burials, ceremonial offerings were added to ritual animal graves like shell beads, ornaments, and exotic goods (Kroeber 1925; Field and Leventhal 2003; Jones 2010).

Ohlone subsistence strategies were based on hunting, gathering, and fishing (Kroeber 1925:467; Skowronek 1998). Larger animals, like bears, might be avoided, but smaller game was hunted and snared on a regular basis (Schick 1994:17). Similar to the rest of California, the acorn was an important staple and was prepared by leaching acorn meal in openwork baskets and in holes dug into the sand (Kroeber 1925:467). The Ohlone also practiced controlled burning to facilitate plant growth (Kroeber 1925:467; Skowronek 1998). During specific seasons or in times of drought, the reserve camps would be utilized for gathering seasonal food and accessing food storage (Schick 1994). Fishing would be done with nets and gorge hooks out of tule reed canoes (Schick 1994:16–17). Mussels were a particularly important food resource. Sea mammals such as sea lions and seals were hunted, and beached whales were exploited (Kroeber 1925:467).

Seven Franciscan missions were built within Ohlone territory in the late 1700s, and all members of the Ohlone group were eventually brought into the mission system (Kroeber 1925:462; Skowronek 1998). After the establishment of the missions, Ohlone population dwindled from roughly 10,000 people in 1770 to 1,300 by 1814 (Skowronek 1998). In 1973, the population of people with Ohlone descent was estimated at fewer than 300. The descendants of the Ohlone united in 1971 and have since arranged political and cultural organizations to revitalize aspects of their culture (Skowronek 1998).

3.13.2 Regulatory Setting

This section describes the state policies and laws relevant to tribal cultural resources for the Project. There are no federal or local plans, policies, or laws specifically related to tribal cultural resources. For a list of policies related to archaeological resources and human remains, including those of Native American origin, refer to Section 3.4, *Cultural Resources.*

State

Assembly Bill 52

AB 52 expanded CEQA by defining a new resource category, “tribal cultural resources.” AB 52 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” (PRC 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC 21084.3). PRC Section 21074 (a)(1)(A) and (B) defines tribal cultural resources as “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe,” and meets either of the following criteria:

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).
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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

In recognition of California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments and with respect to the interests and roles of project proponents, it is the intent AB 52 to accomplish all of the following:

(1) Recognize that California Native American prehistoric, historic, archaeological, cultural, and sacred places are essential elements in tribal cultural traditions, heritages, and identities

(2) Establish a new category of resources in CEQA called "tribal cultural resources" that considers the tribal cultural values in addition to the scientific and archaeological values when determining impacts and mitigation

(3) Establish examples of mitigation measures for tribal cultural resources that uphold the existing mitigation preference for historical and archaeological resources of preservation in place, if feasible

(4) Recognize that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated (Because CEQA calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources)

(5) In recognition of their governmental status, establish a meaningful consultation process between California Native American tribal governments and lead agencies, respecting the interests and roles of all California Native American tribes and project proponents, and the level of required confidentiality concerning tribal cultural resources, early in the CEQA environmental review process, so that tribal cultural resources can be identified, and culturally appropriate mitigation and mitigation monitoring programs can be considered by the decision-making body of the lead agency

(6) Recognize the unique history of California Native American tribes and uphold existing rights of all California Native American tribes to participate in, and contribute their knowledge to, the environmental review process pursuant to CEQA

(7) Ensure that local and tribal governments, public agencies, and project proponents have information available, early in CEQA environmental review process, for purposes of identifying and addressing potential adverse impacts to tribal cultural resources and to reduce the potential for delay and conflicts in the environmental review process

(8) Enable California Native American tribes to manage and accept conveyances of, and act as caretakers of, tribal cultural resources

(9) Establish that a substantial adverse change to a tribal cultural resource has a significant effect on the environment

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. AB 52 requires that lead agencies "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed in the jurisdiction of the lead agency.

3.13.3 Methodology and Significance Thresholds

Methodology

Analysis of tribal cultural resources included a review of the ethnographic setting of the Project corridor, as well as a consideration of the results of AB 52 consultation between the City and local Native Americans. In accordance with AB 52, the City as the lead agency has conducted AB 52 consultation. This consultation included written communication with the following tribes identified by the Native American Heritage Commission on February 17, 2022, as being traditionally and culturally affiliated with the Project vicinity: the Amah Mutsun Tribal Band, the Amah Mutsun Tribal Band of Mission San Juan Bautista, the Costanoan Ohlone Rumsen-Mutsen Tribe, the Indian Canyon Mutsun Band of Costanoan, and the Wuksache Indian Tribe/Eshom Valley Band. The AB 52 letters were sent on May 3, 2022. No Native American tribes requested consultation under AB 52 within the 30-day response window.

Significance Threshold

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes a number of factual inquiries related to the subject of tribal cultural resources and the other environmental topics. Thus, the thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

Appendix G of the *CEQA Guidelines* indicates that a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

1. 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 Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.13.4 Project Impact Analysis

Threshold A:	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: 1. 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 2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impact TCR-1 THE PROJECT MAY CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT WITH MITIGATION; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT WITH MITIGATION)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

The Sacred Lands File search results received from the Native American Heritage Commission on February 17, 2022, were positive for known sacred sites within the Project vicinity. However, as stated in Section 3.13.3, *Methodology and Significance Thresholds*, the City of Santa Cruz did not receive any responses for additional consultation under AB 52 within the 30-day response window. As such, no tribal cultural resources have been identified by local Native American tribes as present within the Project corridor.

Although there are no known tribal cultural resources within the corridor, background research, the positive Sacred Lands File results received from the Native American Heritage Commission, and the response from local Native American groups as a result of the Section 106 consultation indicate that the general area of Santa Cruz has a high sensitivity to containing Native American habitation sites. Project construction involves excavation and ground disturbing activities up to 6 feet deep and drilling up to 20 feet deep. Ground disturbance during Project construction has the potential to encounter unknown tribal cultural resources. Therefore, the Project has the potential to significantly impact tribal cultural resources through ground disturbance and subsequent damage of encountered resources. Implementation of Mitigation Measures TCR-1a and TCR-1b would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible, impacts to resources are reduced. Impacts would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

Mitigation Measure TCR-1a: Conduct Native American Monitoring during Construction in Previously Undisturbed Native Soils

A Native American monitor shall be retained and remain present during excavation activities within previously undisturbed native soils.

In the event that cultural resources of Native American origin are identified during construction, the Native American monitor shall have the authority to halt and redirect ground disturbance away from the find. The City and/or Tribal Liaison, as appropriate, shall consult with a qualified archaeologist and begin or continue Native American consultation procedures. If the City and/or Tribal Liaison, in consultation with local Native Americans, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with Native American groups. The mitigation plan may include but would not be limited to avoidance, capping in place, excavation and removal of the resource, interpretive displays, sensitive area signage, or other mutually agreed upon measure.

Mitigation Measure TCR-1b: Implement Protocol for Unanticipated Discovery of Tribal Cultural Resources, if Native American Monitor is Not Present

If cultural resources of Native American origin are identified during Project construction while the Native American monitor is not present, all earth-disturbing work within 50 feet of the find shall cease and desist until an archaeologist has evaluated the nature and significance of the find as a cultural resource and an appropriate local Native American representative is consulted. Staking of the area of discovery shall be implemented with stakes no more than 10 feet apart, forming a circle having a radius of no less than 100 feet from the point of discovery. If the City, in consultation with local Native American tribes, determines that the resource is a tribal cultural resource and thus significant under CEQA, a mitigation plan shall be prepared and implemented in accordance with state guidelines and in consultation with local Native American group(s). The plan shall include avoidance of the resource or, if avoidance of the resource is infeasible, the plan shall outline the appropriate treatment of the resource in coordination with the appropriate local Native American tribal representative and, if applicable, a qualified archaeologist. Examples of appropriate mitigation for tribal cultural resources include but are not limited to protecting the cultural character and integrity of the resource, protecting traditional use of the resource, protecting the confidentiality of the resource, or heritage recovery.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Project construction involves excavation and ground disturbing activities up to 6 feet deep for implementation of the Interim Trail, which includes removal of the rail and construction of the Interim Trail (part 1). Though there are no known tribal cultural resources present within the Project corridor, it is possible that ground disturbance during construction of the Interim Trail could encounter unknown tribal cultural resources. Impacts to tribal cultural resources for implementation of the Interim Trail would be similar to the impacts described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Compliance with Mitigation Measures TCR-1a and TCR-1b, as described above, would reduce impacts to unknown tribal cultural resources. Impacts would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding the rail line (Interim Trail Part 2) would involve excavation and ground disturbing activities up to 6 feet deep. Though there are no known tribal cultural resources present within the Project corridor, it is possible that ground disturbance during Project construction could encounter unknown tribal cultural resources during this phase. Impacts

to tribal cultural resources during this phase of the Interim Trail would be similar to the impacts described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and Interim Trail Part 1. Compliance with Mitigation Measures TCR-1a and TCR-1b, as described above, would reduce impacts to unknown tribal cultural resources. Impacts would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

3) Construction of the Ultimate Trail Configuration

Impacts from the construction of the Ultimate Trail Configuration as Part 3 of the Interim Trail would be similar to that described above for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Construction of the Ultimate Trail Configuration would have the potential to unearth tribal cultural resources and Mitigation Measures TCR-1a and TCR-1b would be required. Impacts would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

Combined Effect of Interim Trail Parts 1, 2, 3

The combined effects of Interim Trail Parts 1, 2, and 3 would involve three instances of ground disturbance. While no known tribal cultural resources are located within the Project corridor, there is always the possibility of unearthing unknown tribal cultural resources during ground disturbing activities for construction. With multiple phases of ground disturbing work involved with the Interim Trail, the likelihood of discovering unknown tribal cultural resources would increase, and impacts would be potentially significant. The Interim Trail would therefore be required to implement Mitigation Measures TCR-1a and TCR-1b during all three parts. These measures require a Native American monitor and evaluation and protection of tribal cultural resources encountered during construction. Impacts would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Proposed Project, with and without the optional Interim Trail, would have similar impacts on tribal cultural resources. Both scenarios would require ground disturbing activities that have the possibility of unearthing unknown tribal cultural resources. However, the Interim Trail would require more ground disturbing activity because there would be two additional phases of construction. Therefore, impacts from the optional Interim Trail would be greater than the Proposed Project. However, both scenarios would be required to implement Mitigation Measures TCR-1a and TCR-1b requiring a Native American monitor and evaluation and protection of tribal cultural resources encountered during construction. Impacts would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Grading and excavation activities associated with this trail connection would have the potential to unearth and disturb unknown tribal cultural resources, if present. The East Harbor Connection would implement Mitigation Measures TCR-1a and TCR-1b that would require a Native American monitor and evaluation and protection of tribal cultural resources encountered during construction. Impacts to unknown tribal cultural resources would be **less than significant with mitigation** (Mitigation Measures TCR-1a and TCR-1b).

3.13.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
TCR-1. The Project may cause a substantial adverse change in the significance of a tribal cultural resource.	**LTSM**	**LTSM** Substantially similar	**LTSM** Substantially similar	**LTSM** Similar, but slightly greater

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

3.14 Utilities and Service Systems

This section evaluates potential impacts from *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* to wastewater, water, stormwater, and solid waste infrastructure and services. Whereas wastewater conveyance and water supply are evaluated in this section, Section 3.8, *Hydrology and Water Quality*, provides a more detailed analysis of runoff patterns and surface water quality. **Table 3.14-1** presents a summary of Project impacts regarding utilities and service systems.

Table 3.14-1 Summary of Impacts on Utilities and Service Systems[a]

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
UTIL-1. Sufficient water supplies are available to serve the Project, and the Project would not result in the relocation or construction of new or expanded water facilities.	Less than Significant	None Required	Less than Significant
UTIL-2. The Project would not generate wastewater in excess of existing treatment capacity and would not require or result in the relocation or construction of new or expanded wastewater treatment facilities.	Less than Significant	None Required	Less than Significant
UTIL-3. The Project would not require or result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities.	Less than Significant	None Required	Less than Significant
UTIL-4. The Project would not generate solid waste in excess of local landfill capacity.	Less than Significant	None Required	Less than Significant

[a] The impacts and mitigation apply to both the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* unless otherwise noted.

3.14.1 Existing Conditions

Water Supply

The City of Santa Cruz (City) Water Department (SCWD) supplies potable water to the entire City, adjoining unincorporated areas of Santa Cruz County (County), a small part of the City of Capitola, and coastal agricultural lands north of the City. This service area constitutes approximately 20 square miles, providing water service to approximately 96,000 people (City of Santa Cruz 2017). The entirety of the 2.2-mile Project corridor falls within the SCWD service area.

The City is isolated from the water infrastructure associated with the San Francisco Bay and other nearby areas. As there is no connection to outside water systems, the City does not import water for use and distribution in its service area. Therefore, the City's entire water supply comes from either local surface or groundwaters (City of Santa Cruz 2017). Approximately 95% of the City's water supply is sourced from local surface waters. The City's primary surface water source is the San Lorenzo River, which accounts for approximately 47% of the City's water supply (City of Santa Cruz 2022a). Other surface water supplies are sourced from several north coast streams, such as Majors Creek, Laguna Creek, and Liddell Spring. These surface water sources make up approximately 32% of the City's water supply (City of Santa Cruz 2022a). The City's main surface water storage facility is

the Loch Lomond Reservoir (City of Santa Cruz 2017). Only about 5% of the City's water supply is sourced from groundwater. Groundwater is extracted through the Beltz well system from the Purisima Formation of the Santa Cruz Mid-County Groundwater Basin, which is shared by other neighboring water agencies (City of Santa Cruz 2021). Also refer to the discussion in Section 3.8.

Overall, the SCWD's distribution system consists of three water treatment plants, including the Graham Hill Water Treatment Plant and two groundwater treatment plants related to the Beltz well system; four raw water pump stations; 10 treated water pump stations; 15 distribution tanks with a total maximum capacity of 21.2 million gallons of treated water storage; seven surface water diversions; seven production wells; and approximately 300 miles of treated and raw water pipelines interconnecting the entire system through approximately 25,000 different service connections (City of Santa Cruz 2021). The Graham Hill Water Treatment Plant, which primarily treats the City's surface water sources, is located at 715 Graham Hill Road approximately 3 miles north of the Project corridor. It is located adjacent to the San Lorenzo River within the incorporated City of Santa Cruz, but is surrounded by unincorporated Santa Cruz County lands. The plant produces approximately 10 million gallons of water per day; and daily water production fluctuates between 6 and 12 million gallons of water per day based on seasonal demands (City of Santa Cruz 2017). Due to the high elevation of the Graham Hill Water Treatment Plant compared to the SCWD service area, the City's water distribution system is almost entirely gravity-fed, resulting in lower energy usage during distribution (City of Santa Cruz 2017).

The City adopted an Urban Water Management Plan (UWMP) in November 2021 for the SCWD service area, which includes the entirety of the Project corridor. According to the UWMP, water demand in 2020 within the SCWD service area was approximately 2.6 billion gallons. Current projections forecast that total water use (potable and non-potable) will reach approximately 2.8 billion gallons per year by 2045 when considering population growth (City of Santa Cruz 2021). The UWMP analyzes three different hydrological conditions to determine the reliability of water supplies: average/normal water year, single dry water year, and multiple dry water year periods. The UWMP indicates that water supplies under the average/normal year and single dry water year hydrological conditions will be sufficient to meet demand through 2045 (City of Santa Cruz 2021). In an extreme multiple dry water year hydrological condition, the UWMP indicates that the estimated water supply available to the SCWD service area in the near term (2025) during the fourth year would meet over 99% of projected demand, but during the fifth year only 73% of projected demand would be met. However, with implementation of planned water infrastructure projects by 2030, along with proposed water rights modifications, the SCWD's projected water supply would meet projected water demand during all years except for small projected shortages during the fifth year of the extended drought in the 2040–2045 time frame. During this period in the fifth year of the extended drought, the water supply is projected to be able to meet 98% of demand (City of Santa Cruz 2021).

Wastewater

The City provides wastewater collection, treatment, and disposal services to its residents through a system of wastewater infrastructure that includes approximately 160 miles of sanitary sewer lines and 17 pump stations (City of Santa Cruz 2012).

The Santa Cruz Wastewater Treatment Facility (WWTF), a regional facility operated by the City, is located at 110 California Street approximately 0.5 mile west of the Project corridor. The City is expanding its current production and use of recycled water through a recently initiated regional partnership with the Soquel Creek Water District. This partnership will allow the Santa Cruz WWTF to provide source water to the Pure Water Soquel Project. The goal of this project is to contribute a

reliable supplemental water supply to the Santa Cruz Mid-County Groundwater Basin to prevent seawater from contaminating existing groundwater sources (City of Santa Cruz 2022b). Overall, the Pure Water Soquel Project will include the installation of approximately 8 miles of new pipeline underneath streets between the City and the unincorporated communities to the east. These pipelines would carry recycled water from the Santa Cruz WWTF to the planned Chanticleer Water Purification Center in the unincorporated community of Live Oak. The pipelines will then carry purified water from the planned Chanticleer Water Purification Center to three seawater intrusion prevention wells, where the purified water will be pumped into the groundwater basin (City of Santa Cruz 2022b).

The Santa Cruz County Sanitation District (SCCSD) provides wastewater collection, treatment, and disposal services to various unincorporated communities, including Live Oak, Capitola, Soquel and Aptos, through a system of wastewater infrastructure that includes approximately 234 miles of sanitary sewer lines and 35 pump stations (SCCSD 2021). The Santa Cruz WWTF provides wastewater treatment and ocean outfall disposal services to both the City and the SCCSD (City of Santa Cruz 2022b). As such, the Santa Cruz WWTF would be the receiving facility for any liquid waste generated by the Project.

SCCSD has a service agreement with the City to treat its sewage at the regional facility because the SCCSD has no WWTF of its own. Through this agreement, the SCCSD has treatment capacity rights for 8 million gallons of wastewater per day (gpd) at the WWTF (SCCSD 2019).

Treatment capacity at the WWTF has been expanded several times to accommodate the growth of the City and the addition of flows from the SCCSD and to improve the treatment system. The current rated design capacity is 17 million gpd. The WWTF is also designed to accommodate a wet weather flow of 81 gpd (City of Santa Cruz 2012). The SCCSD's customers currently generate between 5 and 6 million gpd, and the WWTF typically has an average daily flow of approximately 12 million gpd (SCCSD 2019). Treated wastewater is ultimately discharged into the Monterey Bay through an ocean outfall (City of Santa Cruz 2012).

Stormwater Drainage

The City maintains a system of storm drains that collect stormwater runoff from City streets along gutters and through underground pipes that ultimately drain to the Monterey Bay (City of Santa Cruz 2012). The system is designed for the control of flooding and does not provide any treatment of the stormwater runoff. The City's underground storm drains are generally designed to carry 10-year recurring storm events. Major storms are infrequent but do typically exceed the capacity of the underground storm drains, resulting in temporary street floodings. On those occasions, stormwater is conveyed on surface facilities, such as streets and channels (City of Santa Cruz 2012). Similar to the City, stormwater runoff in unincorporated Santa Cruz County is typically conveyed through human-made runoff conveyance systems that drain to the Monterey Bay (Schaaf and Wheeler 2013). Stormwater along Segment 8 currently drains to a series of gutters and underground pipes on Beach Street. Stormwater along the rail line associated with Segment 9 currently drains to nearby streets and natural drainages before entering the underground pipes and other human-made runoff conveyance systems within the City and County.

Electric Power and Natural Gas

Both electric power and natural gas services in the City are provided by Pacific Gas & Electric (PG&E). The City is also part of the Central Coast Community Energy, a community choice aggregate program that provides electricity to those within the City who do not opt out, primarily from clean

and renewable sources (Central Coast Community Energy 2022). Electricity along the Project corridor would be provided by PG&E through existing electrical infrastructure.

Solid Waste

Santa Cruz Municipal Utilities provides solid waste services for residential and commercial uses within the City. The City owns and operates a Class III Sanitary Landfill and Recycling Center at the Resource Recovery Facility (RRF) located on Dimeo Lane off State Route 1, approximately 3 miles west of the City limits and approximately 4.5 miles west of the Project corridor's westernmost extent. Operations at the RRF Landfill comply with all regulations, plans, and permits required by the California Integrated Waste Management Board, the State Water Resources Control Board (SWRCB), and the Monterey Bay Air Pollution Control District. The landfill's permitted disposal area was increased from 40 to 67 acres in the mid-1990s, which extended the life of the landfill to approximately 2052 (City of Santa Cruz 2012). The RRF Landfill has a maximum permitted throughput of 535 tons of solid waste per day and has a remaining capacity of 4,806,477 cubic yards (CalRecycle 2019a). Materials accepted at RRF include wood waste, tires, biosolids, mixed municipal wastes, metals, inert wastes, industrial wastes, green materials, dead animals, and construction/demolition wastes (CalRecycle 2019a).

Santa Cruz County Recycling and Solid Waste Services, a division of the County Community Development and Infrastructure Department, is responsible for the operation and administration of solid waste diversion and disposal in the unincorporated areas of Santa Cruz County, including the community of Live Oak along the Project corridor. Santa Cruz County Recycling and Solid Waste Services operates the County's two solid waste facilities, the Buena Vista Drive Sanitary Landfill located west of Watsonville, approximately 10 miles east of the Project corridor's easternmost extent, and the Ben Lomond Transfer Station located in the San Lorenzo Valley, approximately 9.6 miles north of the Project corridor (Santa Cruz County 2022). The Buena Vista Drive Sanity Landfill is a Class III facility with a maximum permitted throughput of 838 tons of solid waste per day and a remaining capacity of 1,766,005 cubic yards (CalRecycle 2019b). Materials accepted at the Buena Vista Landfill include wood waste, tires, biosolids, mixed municipal wastes, metals, inert wastes, industrial wastes, green materials, dead animals, contaminated soil, construction/demolition wastes, and agricultural wastes (CalRecycle 2019b). The Ben Lomond Transfer Station is a permitted large volume transfer and processing facility with a maximum permitted throughput of 300 tons per day. Materials accepted at the Ben Lomond Transfer Station include industrial waste, construction/demolition waste, tires, green materials, and mixed municipal wastes (CalRecycle 2019c). Waste disposed of at the Ben Lomond Transfer Station is periodically transferred to the Buena Vista Landfill. The Buena Vista Landfill is anticipated to reach its capacity by approximately 2028. Therefore, the County is in the process of developing transfer facilities at Buena Vista Landfill, so the solid waste can be transported to the Monterey Peninsula Landfill, located 19 miles south in the City of Marina, which has capacity to accept solid waste for approximately 100 years (Steel, pers. comm. 2022).

Waste generated by the Project would be disposed of at the appropriate jurisdictional landfill. The City's RRF and the County's Ben Lomond Transfer Station and the Buena Vista Landfill have the capacity to serve the Project, as needed. The regional Monterey Peninsula Landfill in Marina also has capacity to receive waste.

3.14.2 Regulatory Setting

This section describes the federal, state, regional, and local plans, policies, and laws relevant to utilities and service systems for the Project.

Federal

Federal Clean Water Act

The primary goals of the federal Clean Water Act (CWA) (33 USC 1251, et seq.) are to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to make all surface waters fishable and swimmable. The CWA forms the basic national framework for the management of water quality and the control of pollutant discharges. The CWA sets objectives to achieve the above mentioned goals. The CWA objectives include regulating pollutant and toxic pollutant discharges; providing for water quality which protects and fosters the propagation of fish, shellfish, and wildlife; developing waste treatment management plans; and developing and implementing programs for the control of non-point sources pollution.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in 1972 under the federal CWA to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities. Wastewater discharge is regulated under the NPDES permit program for direct discharges into receiving waters and by the National Pretreatment Program for indirect discharges to a sewage treatment plant.

The Municipal NPDES program is administered by the SWRCB through the Regional Water Quality Control Boards (RWQCBs) and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. The federal CWA prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB is the permitting authority in California and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order 2009-0009, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). Containment and spill cleanup requirements are encompassed in the Stormwater Pollution Prevention Plan (SWPPP), developed for the Construction General Permit. This includes inspections for spills, a requirement that chemicals be stored in watertight containers with secondary containment to prevent spillage or leakage, procedures for addresses hazardous and non-hazardous spills, including a spill response and implementation procedure, include on-site equipment for cleanup and spills, and spill training for construction personnel.

Safe Drinking Water Act

The Safe Drinking Water Act, enacted in 1974, ensures the quality of drinking water. The law requires actions to protect drinking water and its sources (e.g., rivers, lakes, reservoirs, springs and

groundwater wells) and applies to public water systems that have at least 15 service connections or serve at least 25 people for at least 60 days a year. It authorizes the U.S. Environmental Protection Agency to set national standards for drinking water to protect against health effects from exposure to naturally occurring and human-made contaminants. In addition, the U.S. Environmental Protection Agency works with states, localities and water suppliers that implement the standards. The U.S. Environmental Protection Agency standards are set under the National Primary Drinking Water Regulations, which include legally enforceable primary standards and treatment techniques that apply to public water systems.

State

Water

Drinking water quality in California is regulated by the California Department of Public Health, the California SWRCB, and the nine RWQCBs. The Project corridor is within the boundaries of the Central Coast RWQCB. The California Code of Regulations, Title 22 (State Drinking Water Standards), is the primary body of state legislation providing water system standards, including those for water supply, storage capacity, and water quality. Other considerations include the Porter-Cologne Water Quality Control Act, the Safe Drinking Water Act, and the SWRCB Non-degradation Policy. Refer to Section 3.8.2, *Regulatory Setting*, in Section 3.8 for additional information.

Senate Bill (SB) 610 (2002) amended the California Water Code to require detailed analysis of water supply availability of certain types of development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain types of development projects are fully informed as to whether sufficient water supplies are available to meet project demands. SB 610 requires the preparation of a Water Supply Assessment for a project that is subject to the California Environmental Quality Act (CEQA) and involves any of the following:

- Residential development of 500 or more dwelling units
- Shopping centers or businesses employing more than 1,000 people or having more than 500,000 square feet of floor space
- Commercial office building employing more than 1,000 people or having more than 250,000 square feet of floor space
- Hotel, motel, or both, having more than 500 rooms
- Industrial, manufacturing, or processing facility, or industrial park planned to house more than 1,000 people, occupying more than 40 acres of land, or having more than 650,000 square feet of floor space
- Mixed-use project including one or more of the projects specified in California Water Code, Section 10910
- Any project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project

Because the Project does not fall under any of the above screening criteria, the requirements under SB 610 do not apply.

Assembly Bill (AB) 1881, the Model Water Efficient Landscape Ordinance, required cities and counties to adopt landscape water conservation ordinances by January 31, 2010, or to adopt a different ordinance that is at least as effective in conserving water as the ordinance. The County of Santa Cruz adopted Chapter 13.13, *Water Conservation – Water Efficient Landscaping*, of the

County's Municipal Code pursuant to AB 1881. Similarly, the City adopted Chapter 16.16, *Water-Efficient Landscaping*, of the City's Municipal Code pursuant to AB 1881. Executive Order B-29-15 required the State to revise the Model Water Efficient Landscape Ordinance to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, on-site stormwater capture, and by limiting the portion of a landscape that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances. However, the Project does not include any landscaping that would require watering;[1] therefore, AB 1881, County's Municipal Code, Chapter 13.13, and the City's Municipal Code, Chapter 16.16, would not apply.

Wastewater

The RWQCBs set the specific requirements for community and individual wastewater treatment, disposal, and reuse facilities through the issuance of waste discharge requirements under the California Water Code, Section 13260. Requirements for disposal are set to protect present and potential beneficial uses of the water that receive the treated effluent. The California Department of Public Health sets specific requirements for treated effluent reuse, or recycled water, through Title 22 of the California Code of Regulations. These requirements are primarily set to protect public health.

California Code of Regulations, Title 22, Division 4, Chapter 3, Sections 60301 through 60355, are used to regulate recycled wastewater and are administered jointly by the California Department of Public Health and the RWQCBs. Title 22 contains effluent requirements for four levels of wastewater treatment, from non-disinfected secondary recycled water to disinfected tertiary recycled water. Higher levels of treatment have higher effluent standards, allowing for a greater number of uses under Title 22, including irrigation of freeway landscaping, pasture for milk animals, parks and playgrounds, and vineyards and orchards for disinfected tertiary recycled water.

Solid Waste

The California Integrated Waste Management Act of 1989 (AB 939) set a requirement for cities and counties throughout the state to divert 50% of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. To help achieve this, the Act required that each city and county prepare and submit a Source Reduction and Recycling Element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

In 2007, SB 1016 subsequently amended AB 939 such that it now entails the 50% diversion requirement to be calculated in a per capita disposal rate equivalent. CalRecycle sets a target per capita disposal rate for each jurisdiction, and each jurisdiction must submit an annual report to CalRecycle with an update of its progress in implementing diversion programs and its current per capita disposal rate. AB 341 was passed in 2011, setting a state policy goal whereby no less than 75% of solid waste generated be source reduced, recycled, or composted by 2020.

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11, Title 24, known as "CALGreen") was adopted as part of the California Building Standards Code. Section 4.408, *Construction Waste Reduction Disposal and Recycling*, mandates that in the absence of a more stringent local ordinance, a minimum of 50% of non-hazardous construction and demolition debris must be recycled or

[1] Areas disturbed by construction activities would be revegetated with native species and would be watered periodically until established (e.g., by hand or small water truck) in accordance with recommendations made by a qualified biologist.

salvaged. The code requires the applicant to have a waste management plan for on-site sorting or construction debris, which is submitted to the County for approval.

Local

Santa Cruz County General Plan

The Parks, Recreation, and Public Facilities Element of the County's General Plan, adopted in 1994, includes objectives and policies relating to the use and provision of public utilities (Santa Cruz County 1994). Key policies relevant to the Project are listed below:

- **Objective 7.18b, Water Supply Limitations.** To ensure that the level of development permitted is supportable within the limits of the County's available water supplies and within the constraints of community-wide goals for environmental quality.
- **Policy 7.18.1, Linking Growth to Water Supplies.** Coordinate with all water purveyors and water management agencies to ensure that land use and growth management decisions are linked directly to the availability of adequate, sustainable public and private water supplies.
- **Policy 7.18.3, Impacts of New Development on Water Purveyors.** Review all new development proposals to assess impacts on municipal water systems, County water districts, or small water systems. Require that either adequate service is available or that the proposed development provide for mitigation of its impacts as a condition of project approval.
- **Policy 7.18.6, Water Conservation Requirements.** Utilize the best available methods for water conservation in new developments. Work with all water purveyors to implement demand management programs and water conservation measures. In areas where shortage or groundwater overdraft has been substantiated by the water purveyor, require water conservation measures for new and existing uses. Require the use of water-saving devices such as ultra low-flow fixtures and native drought-resistant planting in new development projects to promote ongoing water conservation.
- **Policy 7.19.1, Sewer Service to New Development.** Concurrent with project application, require a written commitment from the service district. A written commitment is a letter, with appropriate conditions, from the service district guaranteeing that the required level of service for the project will be available prior to issuance of building permits, or in the case of a subdivision, prior to filing the Final Map or Parcel Map. The County decision making body shall not approve any development project unless it determines that such project has adequate sewage treatment plant capacity.
- **Policy 7.23.1, New Development.** Require new discretionary development projects to provide both on and off-site improvements to alleviate drainage problems before considering on-site detention of storm water. Require runoff levels to be maintained at predevelopment rates for a minimum design storm as determined by Public Works Design Criteria to reduce downstream flood hazards and analyze potential flood overflow problems, where applicable. Require on-site retention and percolation of increased runoff from new development in Water Supply Watersheds and Primary Groundwater Recharge Areas, and in other areas as feasible.
- **Policy 7.23.3, On-Site Stormwater Detention.** Where it is not possible to alleviate drainage problems through on- and off-site improvements required by Policy 7.23.1, require on-site stormwater detention sufficient to maintain, at a minimum, post-development peak flows at predevelopment levels for the selected design rainstorm for all development projects greater than one acre in area, and to alleviate current drainage problems, if feasible. When on-site detention is used, the development projects shall be conditioned to ensure ongoing operation and maintenance of the detention basins.

- **Policy 7.24.9, Storage Requirements for Recyclable Materials.** Require all projects, except single family dwellings, to provide sufficient and accessible space for the storage and collection of recyclable materials separate from, and in addition to, space for refuse storage and collection. Encourage owners of existing buildings to provide such space, where feasible.
- **Policy 7.25.4, Buena Vista Landfill.** Continue the use of the Buena Vista Landfill for landfill disposal and the Ben Lomond Transfer Station for solid waste transfer to Buena Vista. Utilize disposal methods and diversion practices at the Buena Vista Landfill to extend the landfill lifespan as long as possible.

Santa Cruz County Municipal Code

The County's Municipal Code, Chapter 7.20, focuses on regulations and requirements for solid waste. Specifically, Section 7.20.010 requires garbage collection services are property licensed, Sections 7.20.017 and 7.20.095 prohibit the mixing of recyclables and garbage, and Sections 7.20.110 and 7.20.130 require timely retrieval of garbage from garbage containers.

City of Santa Cruz General Plan

The Civic and Community Facilities Element of the City's General Plan includes objectives and policies relating to the use and provision of public utilities (City of Santa Cruz 2012). Key policies relevant to the Project are listed below:

- **Objective CC3.3.** Safeguard existing surface and groundwater sources.
- **Objective CC3.4.** Maintain and improve the integrity of the water system.
- **Policy CC3.4.3.** Optimize storage, transmission, and distribution capacities and efficiencies.
- **Objective CC3.5.** Promote maximum water use efficiency.
- **Objective CC3.11.** Conserve water resources.
- **Objective CC4.1.** Provide an adequate and environmentally sound wastewater collection, treatment, and disposal system.
- **Policy CC4.1.3.** Maintain and upgrade the wastewater collection and treatment system.
- **Policy CC5.1.2.** Maintain clear flow of the storm drain system.
- **Policy CC5.1.8.** Require new development to maintain predevelopment runoff levels.
- **Policy CC5.1.9.** Reduce stormwater pollution.
- **Policy CC6.1.7.** Require new developments to design service areas that encourage recycling.
- **Policy CC6.1.9.** Increase the use of recycled materials such as asphalt, groundcovers, carpet, etc., in City operations and construction.
- **Policy CC6.1.12.** Promote the use of products that are reusable, recyclable, or biodegradable.

City of Santa Cruz Municipal Code

The City's Municipal Code, Chapter 6.12, focuses on regulations and requirements for solid waste. Specifically, the City's Municipal Code, Section 6.12.030, requires the collection of acceptable waste and recyclables be made at least once per week, and requires that refuse be separated into solid waste, green waste, food waste, or recyclable materials. The City's Municipal Code, Section 6.12.050, requires waste receptacle be stored in a manner that facilitates a safe and sanitary condition that does not impose a barrier to efficient and physically safe collection by City collection crews. The City's Municipal Code Title 16 focuses on regulations and requirements for Water, Sewers, and Other Public Services. Specifically, the City's Municipal Code, Chapter 16.02, ensures that the City's water supply is put to maximum beneficial use and prevents waste, unreasonable water use, and unreasonable method of water use. For example, the City's Municipal Code, Section 16.02.040, prohibits the use of

potable water for dust control or soil compaction purposes in construction activities where there is a reasonably available source of reclaimed water appropriate for such use. The City's Municipal Code, Chapter 16.04, establishes the City's water service area and delineates the specific types of services provided. The City's Municipal Code, Chapter 16.08, outlines the City's Sewer System Ordinance, which establishes that all wastewater shall be discharged to public sewers and no independent user shall cause the discharge of non-stormwater runoff to enter the storm drain system. Furthermore, the City's Municipal Code, Section 16.08.110, prohibits and limits the discharge of certain materials and pollutants into the City's storm drain system. The City's Municipal Code, Chapter 16.15, establishes the City Council's authority to regulate water usage within City limits. The City's Municipal Code, Chapter 16.16, promotes efficient water usage by regulating water-efficient landscaping design. The City's Municipal Code, Chapter 16.19, establishes the control of water pollution through regulations related to stormwater and urban runoff. For example, the City's Municipal Code, Section 16.19.070, prohibits the discharge of sewage; the City's Municipal Code, Section 16.19.090, prohibits the discharge of polluting or damaging substances; the City's Municipal Code, Section 16.19.140, establishes best management practices for construction activities; and the City's Municipal Code, Section 16.19.170, establishes the City's right of entry for inspection.

3.14.3 Methodology and Significance Thresholds

Methodology

This analysis considers the potential environmental impacts of the Project on utilities and service systems. Assessment of impacts to utilities and service systems is based on a review of site information, existing conditions, and proposed uses. The analysis presented herein is also based upon state, County, and City information regarding the capacity and features of existing utility infrastructure, including potable water, wastewater, and solid waste infrastructure and facility capacity.

Significance Thresholds

The introduction in Chapter 3, *Environmental Impact Analysis*, states that the significance thresholds used in this analysis are based on Appendix G of the *CEQA Guidelines*, which provides a sample Initial Study checklist that includes number of factual inquiries related to the subject of utilities and service systems, as well as the other environmental topics. Thus, the letters and thresholds presented below correspond with the questions in the Appendix G Initial Study checklist.

For purposes of this Environmental Impact Report, a significant impact would occur if implementation of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and the *Optional First Phase: Trail on the Rail line (Interim Trail)* would result in any of the following conditions:

A. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

B. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

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.

As described in **Table 3.14-2**, Threshold A covers several utilities and services, while Thresholds B–E focus on water, wastewater, and solid waste individually. To facilitate and streamline the discussions, each impact discussions focuses on the utilities as follows.

Table 3.14-2 Thresholds Addressed in Impact Discussions

Impact Discussion	Focus	Threshold Addressed
Impact UTIL-1	Water	A, B
Impact UTIL-2	Wastewater	A, C
Impact UTIL-3	Stormwater, Electric Power, Natural Gas, Telecommunications	A
Impact UTIL-4	Solid Waste	D, E

Conflicts with hazardous material pipelines are not addressed in the significance thresholds above. Impacts related to this type of utility conflict are addressed in Section 3.7, *Hazards and Hazardous Materials*. Potential impacts to water quality are addressed in Section 3.8.

3.14.4 Project Impact Analysis

Threshold A:	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
Threshold B:	Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

Impact UTIL-1 SUFFICIENT WATER SUPPLIES ARE AVAILABLE TO SERVE THE PROJECT, AND THE PROJECT WOULD NOT RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED WATER FACILITIES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail Next to Rail Line (Ultimate Rail Configuration)

Construction

The Project would require water usage during construction for dust suppression and revegetation of disturbed areas. This minimal amount of water required for Project construction would be similar to other construction projects in the region and would result in a minimal temporary impact to water supply. As described in Section 3.14.1, *Existing Conditions*, the SCWD water supplies would be sufficient to meet demand in its service area through 2045 under the average/normal year and single dry water year hydrological conditions. In the extreme multiple dry water year hydrological condition, the City's projected water supply would meet projected water demand during all years, except for small projected shortages during the fifth year of the extended drought in the 2040–2045 time frame. During the period in the fifth year of the extended drought, it is anticipated that supply would meet 98% of demand in the SCWD service area (City of Santa Cruz 2021). Construction of the Project is estimated to begin in 2023 or 2024 and would continue for approximately 24 months, as

detailed in Section 2.6, *Project Construction*, in Chapter 2, *Project Description*. As such, adequate water supplies would be available to serve construction of the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. Furthermore, any water required for construction of the Project would be provided by a water truck. Therefore, construction of the Project would not result in the relocation or construction of water facilities. This impact would be **less than significant**. No mitigation is required.

Operation

Operation of the Project would not result in a permanent demand for water, as the Project does not propose additional bathrooms, water fountains, irrigation, or other water-dependent uses and features. Furthermore, the Project would not result in an increase in permanent population or introduce unanticipated growth in the City or County. Any landscaping or vegetated areas disturbed by Project construction activities would be replaced with a native, drought-tolerant, non-irrigated seed mix. These revegetated areas would require periodic watering until fully established. Watering of revegetated areas would take place either by truck or by hand. Therefore, the Project would not result in the need for new or expanded water facilities. Water requirements for revegetation would be minimal and temporary in nature until plants are established. As such, adequate water supplies would be available to serve operation of the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. Therefore, operation of the Project would not result in the relocation or construction of water infrastructure. This impact would be **less than significant**. No mitigation is required.

In summary, the construction and operation impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail in its place) would result in similar water supply demands as described above for Impact UTIL-1 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Specifically, the optional Interim Trail would require minimal amounts of water during construction, but it would not result in a permanent increase in water demand. Construction of the Interim Trail is estimated to occur 2025–2027, as described in Section 2.6.2, *Optional First Phase: Trail on the Rail Line (Interim Trail).* As such, adequate water supplies would be available to serve implementation of the Interim Trail during normal, dry, and multiple dry years. Furthermore, water would be supplied to the Project corridor by a water truck during construction of the Interim Trail, and operation of the Interim Trail would not result in a permanent demand for water. As such, implementation of the Interim Trail would not result in the relocation or construction of water facilities, which could cause significant environmental effects. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and implementation of the Interim Trail Part 1, demolition of the Interim Trail and rebuilding of the rail line (Part 2) would result in a minimal and temporary increase in demand for water during demolition and rebuilding activities, such as dust suppression and revegetation of disturbed areas. Demolition of the Interim Trail and rebuilding of the rail line is estimated to occur 2056–2060, as

described in Section 2.6.2. The SCWD's most recent UWMP only analyzes the adequacy of water supply through 2045. However, due to the minimal and temporary nature of the water demands associated with this part of implementing the optional Interim Trail, it is anticipated that there would be sufficient water supply to serve the demolition of the Interim Trail and rebuilding of the rail line. Furthermore, demolition of the Interim Trail and rebuilding of the rail line would not result in the relocation or construction of water facilities, as any water needed for construction or demolition activities would be provided by a water truck. Therefore, this impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact UTIL-1, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. The impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the Interim Trail (Parts 1, 2, and 3) would result in a minimal and temporary amount of water that would be required for activities such as dust suppression and revegetation of disturbed areas during implementation of the Interim Trail, demolition of the Interim Trail and rebuilding of the rail line, and construction of the Ultimate Trail Configuration. Considering the minimal water demand associated with the optional Interim Trail, it is anticipated that there would be sufficient water supply to serve the minimal and temporary water requirements associated with implementation of all three parts of the Interim Trail. Furthermore, the Interim Trail would not result in the relocation or construction of water facilities, which could cause significant environmental effects. Therefore, these combined impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts related to water facilities and the sufficiency of water supplies. Under either scenario, the Project would require a minimal and temporary amount of water during activities such as construction dust suppression and revegetation of disturbed areas upon operation. However, the Project with the optional Interim Trail would result in slightly increased demands for water, compared to the Project without the Interim Trail, due to additional construction and demolition phases. Considering the implementation of planned water infrastructure projects by 2030, such as the Pure Water Soquel Project, along with proposed water rights modifications, it is anticipated that there would be sufficient water supply to serve the minimal water demands associated with both construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and all phases of the optional Interim Trail. Furthermore, neither the Project nor the optional Interim Trail would result in an increase in permanent population or introduce unanticipated growth in the City or County, which could result in the need for expanded water infrastructure. As such, neither the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* or the optional Interim Trail would require the relocation or construction of new or expanded water treatment facilities. Overall, these impacts would be **less than significant** for both the Proposed Project with or without and the optional Interim Trail**.**

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Impacts related to the adequacy of available water supplies and the construction of new or expanded water infrastructure associated with implementation of this connection would be slightly more, but still similar to, the impacts described above for the Ultimate Trail Configuration and the optional Interim Trail due to the increased but temporary and minimal water demands during construction of this extended trail connection. Similar to both the Ultimate Trail and the Interim Trail, adequate water supplies would be available to serve construction of the East Harbor Connection during normal, dry and multiple dry years. Furthermore, neither construction nor operation of the East Harbor Connection would result in the relocation or construction of water facilities, which could cause significant environmental effects. Therefore, these impacts would be slightly increased compared to the Project and optional Interim Trail, but would remain **less than significant**.

Threshold A:	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
Threshold 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.

Impact UTIL-2 THE PROJECT WOULD NOT GENERATE WASTEWATER IN EXCESS OF EXISTING TREATMENT CAPACITY AND WOULD NOT REQUIRE OR RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED WASTEWATER TREATMENT FACILITIES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

Construction of the Project could generate wastewater through the use of portable toilets by construction workers. Any wastewater generated during Project construction would be minimal and temporary in nature, and would be collected on-site via vacuum service truck and ultimately disposed of at the Santa Cruz WWTF. As described under Section 3.14.1, the Santa Cruz WWTF's current design capacity is 17 million gpd with a wet weather flow capacity of 81 million gpd. The WWTF averages a daily flow of approximately 12 million gpd. As such, the Santa Cruz WWTF has adequate capacity to serve the Project's construction phase demand in addition to existing commitments. Furthermore, construction of the Project would not result in the relocation or construction of wastewater infrastructure, as no permanent wastewater facilities would be installed or required. These impacts would be **less than significant**. No mitigation is required.

Operation

The Project would not result in the addition of bathrooms or potable water fixtures that would generate a permanent demand for wastewater treatment. Furthermore, the Project would not result in an increase in permanent population or introduce unanticipated growth in the City or County, which could result in the need for expanded wastewater infrastructure. Therefore,

operation of the Project would not result in the relocation or construction of wastewater infrastructure, and **no impact** would occur. No mitigation is required.

In summary, this impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail) would result in similar wastewater treatment demands as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Specifically, implementation of the Interim Trail would generate wastewater through the use of portable toilets by construction workers. Any wastewater generated during construction of the Interim Trail would be minimal and temporary in nature, and would ultimately be disposed of at the Santa Cruz WWTF, which has adequate capacity to serve projected demand in addition to existing commitments. Implementation of the Interim Trail would not result in the addition of bathrooms or potable water fixtures that would generate a permanent demand for wastewater treatment. Furthermore, implementation of the Interim Trail would not result in the relocation or construction of wastewater facilities, which could cause significant environmental effects. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and implementation of the Interim Trail Part 1, demolition of the Interim Trail and rebuilding of the rail line (Part 2) would generate wastewater through the use of portable toilets by construction workers. Demolition of the Interim Trail and rebuilding of the rail line would not result in a permanent demand for wastewater treatment. Any wastewater generated during demolition of the Interim Trail and rebuilding of the rail line would be minimal and temporary in nature, and would be collected on-site via vacuum service truck and ultimately disposed of at the Santa Cruz WWTF, which has adequate capacity to serve projected demand in addition to existing commitments. Furthermore, demolition of the Interim Trail and rebuilding of the rail line would not result in the relocation or construction of wastewater facilities, which could cause significant environmental effects. This impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact UTIL-2, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the Interim Trail (Parts 1, 2, and 3) would generate a minimal amount of wastewater through the use of portable toilets by construction workers during of all three parts (implementation of the Interim Trail, demolition of the Interim Trail and rebuilding of the rail line, and construction of the Ultimate Trail Configuration). The optional Interim Trail would not result in the addition of bathrooms or potable water fixtures that would generate a permanent demand for wastewater treatment. Any wastewater generated during construction

activities would be disposed of at the Santa Cruz WWTF, which has adequate capacity to serve these needs. Furthermore, the optional Interim Trail would not result in the relocation or construction of wastewater facilities, which could cause significant environmental effects. Therefore, these combined impacts would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar impacts related to wastewater facilities and wastewater treatment capacity. Under either scenario, the Project would generate a minimal amount of wastewater through the use of portable toilets by construction workers, which would be disposed of at the Santa Cruz WWTF. As discussed above, the Santa Cruz WWTF would have adequate capacity to serve the projected demand for the Project with or without the Interim Trail. Furthermore, the Project, with or without the Interim Trail, would not result in an increase in permanent population or introduce unanticipated growth in the City or County, which could result in the need for expanded wastewater infrastructure; and it would not require the relocation or construction of new or expanded wastewater treatment facilities. Overall, the impact of the Project, with or without the optional Interim Trail, would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Impacts related to the adequate capacity of wastewater treatment facilities and the construction of new or expanded wastewater treatment infrastructure associated with implementation of this connection would be slightly more, but still similar to, the impacts described above for *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*, due to the increased but temporary and minimal wastewater treatment demands during construction of this extended trail connection. The Santa Cruz WWTF would have an adequate capacity to treat waste generated during construction of the East Harbor Connection. Furthermore, neither construction nor operation of the East Harbor Connection would result in the relocation or construction of wastewater treatment facilities, which could cause significant environmental effects. Therefore, the East Harbor Connection would slightly increase this impact but would remain **less than significant**.

Threshold A:	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Impact UTIL-3 THE PROJECT WOULD NOT REQUIRE OR RESULT IN THE RELOCATION OR CONSTRUCTION OF NEW OR EXPANDED STORMWATER DRAINAGE, ELECTRIC POWER, NATURAL GAS, OR TELECOMMUNICATIONS FACILITIES. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

STORMWATER DRAINAGE

Construction activities for the Project would involve stockpiling, grading, excavation, paving, and other earth-disturbing activities that could temporarily alter existing stormwater drainage patterns. However, because the Project would disturb more than one acre, construction activities would be subject to the requirements of the Construction General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order Nos. 2010-0014-DWQ and 2012-0006-DWQ (Construction General Permit), adopted by the SWRCB. Compliance with the requirements of the Construction General Permit would require the elimination of non-stormwater discharges to storm sewer systems and other waters of the United States, as well as development and implementation of a SWPPP that specifies best management practices to reduce pollution in stormwater discharges and control alteration in drainage patterns. Typical best management practices contained in SWPPPs are designed to minimize erosion during construction, maintain existing drainage patterns, stabilize construction areas, control sediment, and control pollutants from construction materials. Compliance with the Construction General Permit and implementation of the SWPPP would ensure that construction of the Project would not require the relocation or construction of new or expanded stormwater drainage facilities. Therefore, construction impacts associated with stormwater drainage would be **less than significant**. No mitigation is required.

ELECTRICITY AND NATURAL GAS

Construction of the Project would require minimal amounts of electricity during the use of power tools, as described in Section 2.6. Energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. It is anticipated that any electric-powered construction equipment would be powered by a generator or by existing available power lines and connections, and would not result in a substantial demand on the existing energy supply. Construction of the Project would not involve any other components requiring electrical or natural gas service to the Project corridor. Also refer to the discussion of Energy in Section 3.15, *Effects Found to be Less than Significant*. Therefore, construction and operation of the Project would not result in the relocation or construction of electricity or natural gas infrastructure, and a **less than significant impact** would occur. No mitigation is required.

TELECOMMUNICATIONS

Construction of the Project would not involve any components requiring telecommunications infrastructure and would not involve the relocation of existing telecommunications facilities. Therefore, construction of the Project would not result in the relocation or construction of telecommunications infrastructure, and there would be **no impact**.

Operation

STORMWATER DRAINAGE

As described above and detailed in Chapter 2, the Project would result in a variety of drainage improvements. Specifically, the Project would result in the relocation of an existing storm drain inlet at the eastern end of Beach Street near the restrooms; curb and gutter relocation at the intersection of Seabright Avenue and Murray Street; construction of a graded natural material swale adjacent to Segment 9; construction of a new storm drainpipe system under the trail along Segment 9; and, relocation and/or connection of the existing storm drain system to the proposed systems in Segments 8 and 9 at 10 separate locations. Furthermore, the Project would install a system of down drains at the backs of proposed retaining walls to intercept upstream and slope drainage within Segment 9. The Project would also install storm drain catch basins and outlet structures along the length of Segment 9.

During operation of the Project, stormwater would generally flow from the new and replaced impervious surfaces into the existing drainage system or into the natural material swale included in the trail design along Segment 9. Specifically, new and replaced impervious surfaces along Segment 8 would drain to existing adjacent vegetated areas. At the locations along Beach Street where drainage runoff to vegetated areas would be infeasible due to the existing right-of-way and roadway infrastructure, stormwater runoff would continue to discharge based on the existing drainage patterns in the roadway. Runoff from new or replaced impervious trail surfaces along Segment 9 would discharge to a graded natural material swale proposed adjacent to the trail alignment. The swale, along with the associated down drains, ditches, and pipes, would comply with all City and County Design Criteria Standards and would adequately convey the 10-year storm. Any trail-generated flows and off-site flows that exceed the capacity of the proposed swale would be diverted to the proposed storm drainpipe system under the trail. The proposed storm drainpipe system would have the capacity to convey any additional off-site flows that would be intercepted by the new storm drain infrastructure. Stormwater within this system would ultimately be piped under the trail to an outlet structure at an existing storm drain system or downstream creek. Due to these built-in design features, operation of the Project would not require the additional relocation or construction of stormwater drainage facilities that could result in significant environmental impacts. As the proposed stormwater drainage improvements would be adequate for future drainage conditions such that new or expanded water drainage facilities beyond those proposed would not be necessary. Therefore, operational impacts associated with stormwater drainage would be **less than significant**. No mitigation is required.

ELECTRICITY AND NATURAL GAS

The Project would result in the installation of new lighting along the Project alignment for safety purposes. The types of lighting that could be installed includes surface mounted fixtures on undercrossings, surface mounted wall packs on retaining walls, pole-mounted fixtures with light-emitting diode (LED) lights, poles with single-head light fixtures, and double luminaire streetlights.

Solar lighting would be used wherever feasible; where solar is infeasible, new lighting would be installed and operated with extensions from the existing electric system. Similarly, the Project would result in the addition of new traffic signal poles and arms at the Seabright Avenue roadway crossing, as well as the installation of rectangular rapid-flashing beacons at the 7th Avenue and 17th Avenue roadway crossings. These additions would also be installed and operated with extensions from the existing electric system. Operation of the Project would not involve any other components requiring electrical or natural gas service to the Project corridor. The increase in energy demands associated with Project operation would be minimal and would be met by existing energy supplies through existing energy infrastructure. Therefore, operation of the Project would not require the relocation or construction of new electricity or natural gas infrastructure, and a **less than significant impact** would occur. No mitigation is required.

TELECOMMUNICATIONS

Operation of the Project would not involve any components requiring telecommunications infrastructure and would not involve the relocation of existing telecommunications facilities. Additionally, the Project would not result in an increase in permanent population or introduce unanticipated growth in the City or County, which could result in the need for expanded telecommunications infrastructure. Therefore, operation of the Project would not result in the relocation or construction of telecommunications infrastructure, and there would be **no impact**. No mitigation is required.

In summary, the potential impacts to stormwater drainage, electricity, natural gas, and telecommunications would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

Implementation of the optional Interim Trail Part 1 (demolishing the rail line and constructing the Interim Trail in its place) would result in similar impacts to stormwater drainage, electricity, natural gas, and telecommunications as described above under Impact UTIL-3 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. In general, stormwater would surface flow from the new paved trail to the adjacent natural surfaces, as described in Section 2.6.2. Like the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, any drainage improvements necessary to maintain existing flow patterns, as described above for would be made in conjunction with construction of the Interim Trail, such that future drainage improvements would not be required. Implementation of the Interim Trail would result in the same energy demands during construction and operation as described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Similarly, telecommunications infrastructure would not be required for implementation of the Interim Trail.

Therefore, implementation of the Interim Trail (Part 1) would not result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. This impact would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Similar to construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and implementation of the Interim Trail Part 1, any drainage improvements necessary to maintain existing flow patterns during demolition of the Interim Trail or rebuilding of the rail line (Part 2) would have been made in conjunction with implementation of the Interim Trail such that additional drainage improvements would not be required during this phase. Demolition of the Interim Trail and rebuilding of the rail line would result in a minimal and temporary increase in demand for electricity for additional construction vehicles, similar to construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* and implementation of the Interim Trail (Part 1). Furthermore, telecommunications infrastructure would not be required for demolition or rebuild of the rail line.

Therefore, demolition of the Interim Trail and rebuilding of the rail line (Part 2) would not result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. This impact would be **less than significant**. No mitigation is required.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact UTIL-3, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, any storm drainage improvements necessary to maintain existing flow patterns would be made in conjunction with implementation of the Interim Trail throughout Parts 1, 2, and 3 such that additional drainage improvements would not be required. A minimal amount of electricity would be required for use of power tools during construction activities associated with all three parts. However, any electric-powered construction equipment would be powered by a generator or by existing available power lines and connections, and would not result in a substantial demand on the existing energy supply. Any lighting or roadway crossing installations associated with the operation of the Interim Trail (Part 1) or Ultimate Trail Configuration (Part 3) would be operated with extensions from the existing electric system, similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. The Interim Trail would not involve any other components requiring electrical or natural gas service to the Project corridor. Telecommunications facilities would not be required for the Interim Trail. Therefore, the combined impacts of implementing the Interim Trail (Parts 1, 2, and 3) related to construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects, would be **less than significant**. No mitigation is required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project, with and without the optional Interim Trail, would have similar utility impacts. Under either scenario, the Project includes drainage improvements to maintain existing flow patterns and would require minimal amounts of electricity for power tools. However, the Project with the optional Interim Trail would require more electricity than the Project without the Interim Trail due

to the two additional construction phases and the demolition phase that would require more power tools. Energy requirements for the Project, with and without the Interim Trail, would be facilitated by a generator or by existing available power lines and connections, and neither scenario would result in a substantial demand on the existing energy supply or require telecommunications infrastructure. Therefore, impacts related to the construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities for the Project, with and without the Interim Trail, would be **less than significant**.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. Impacts related to the construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities associated with implementation of this connection would be slightly more, but still similar to, the impacts described above for the Project, with and without the optional Interim Trail, due to the increased but temporary energy requirements during the use of power tools for construction of this extended trail connection. Any electric-powered construction equipment would be powered by a generator or by existing available power lines and connections, and would not result in a substantial demand on the existing energy supply. Any drainage improvements necessary to maintain existing flow patterns would be made in conjunction with project implementation such that additional drainage improvements would not be required. Furthermore, telecommunications infrastructure would not be required for this connection. Therefore, impacts related to the construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities for the East Harbor Connection would be slightly increased compared to the Project and optional Interim Trail, but would remain **less than significant**.

Threshold 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.
Threshold E:	Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impact UTIL-4 THE PROJECT WOULD NOT GENERATE SOLID WASTE IN EXCESS OF LOCAL LANDFILL CAPACITY. (ULTIMATE TRAIL CONFIGURATION: LESS THAN SIGNIFICANT; OPTIONAL INTERIM TRAIL: LESS THAN SIGNIFICANT)

Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

Construction

The Project would generate construction waste, which would be disposed at the appropriate landfill that has capacity to serve the Project. Construction waste within the City's jurisdiction would likely be disposed at the City's RRF Landfill, located approximately 4.5 miles west of the Project corridor's westernmost extent. Construction waste within the County's jurisdiction would likely be disposed at the Buena Vista Landfill or at the Ben Lomond Transfer Station, which periodically transfers solid waste to the Buena Vista Landfill. The regional Monterey Peninsula Landfill in Marina also has capacity to receive waste. As described under Section 3.14.1, the RRF Landfill has an estimated remaining capacity of 4,806,477 cubic yards and the Buena Vista Landfill has an estimated remaining capacity of 1,766,005 cubic yards (CalRecycle 2019a, 2019b).

As described in **Table 2-2** in Chapter 2, the Project would generate an estimated 17,945 cubic yards of construction-related waste. The total amount of construction waste generated by the Project would equate to less than 1% of the RRF Landfill's remaining daily capacity. Furthermore, any excess construction waste could be disposed of at the Buena Vista Landfill. Therefore, the Project would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Furthermore, any solid waste receiving facilities that would serve the Project currently operate under State of California Solid Waste Facilities Permits issued by CalRecycle, and therefore comply with applicable solid waste statutes and regulations described in Section 3.14.2, *Regulatory Setting*. Therefore, construction impacts associated with the generation of solid waste would be **less than significant**.

Operation

During operation, a minimal amount of solid waste would be generated by trail users. Several areas along the Project corridor have existing trash receptacles, including Main Beach, Santa Cruz Harbor, and Simpkins Swim Center. Trash receptacles would be added to the Project corridor, including recycling receptacles and dog waste stations at the Mott Avenue, Seabright Avenue, 7th Avenue, and 17th Avenue roadway crossing. This would result in approximately 12 new trash and recycling receptacles proposed along the Project corridor that would be available to collect operational solid waste. Although the frequency of waste collection would be determined by the City and County for their respective jurisdictions along the trail, it is reasonable to assume the trash receptacles would be emptied twice a week during peak periods to accommodate the anticipated volume of trail users. As stated in Section 2.5, *Project Operation and Maintenance*, it is estimated that there could be an average of 3,500 trail users per day. However, the Project would not result in an increase in permanent population or introduce unanticipated growth in the City or County. As such, any waste generated along the Project corridor would not be considered new waste added to the waste stream; rather, the Project would result in waste being collected from new locations. Therefore, the RRF Landfill and Buena Vista Landfill would have the daily throughput capacity to receive all solid waste generated along operation of the Project. Therefore, the Project would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Furthermore, any solid waste receiving facilities that would serve the Project currently operate under State of California Solid Waste Facilities Permits issued by CalRecycle, and therefore comply with applicable solid waste statutes and regulations described in Section 3.14.2. Therefore, operation impacts associated with the generation of solid waste would be **less than significant**.

In summary, the impact would be **less than significant**. No mitigation is required.

Optional First Phase: Trail on the Rail Line (Interim Trail)

1) Implementation of Interim Trail

As stated in **Table 2-4**, implementation of the Interim Trail (Part 1), which includes demolition of the rail and construction of the Interim Trail, would generate approximately 13,600 cubic yards of construction-related waste. Of this total, it was estimated that 2,846 cubic yards of the construction-related waste would be from excavated soil, and the remaining 10,754 cubic yards of construction-related waste would be from removal of railroad ties. Refer to Section 3.2.3, *Methodology and Significance Thresholds*, in Section 3.2, *Air Quality*, for a summary of the modeling assumptions used calculate these waste amounts. As the railroad ties are formally designated as treated wood waste by the California Department of Toxic Substances Control, they would be

transported and disposed of in accordance with the alternative management standards established by the Legislature in AB 1353 (2004), Treated Wood Waste Management in California. Both the Santa Cruz RRF Landfill and the Buena Vista Landfill have been authorized by the SWRCB to accept treated wood waste (SWRCB 2022). The estimated 13,600 cubic yards of construction waste generated by implementation of the Interim Trail (Part 1) would equate to less than 1% of the RRF Landfill's and Buena Vista Landfill's remaining daily capacity. Project waste would likely be disposed at the landfill within the respective jurisdiction. In addition, excess construction waste could be disposed of at other landfills outside the area, such as the Monterey Peninsula Landfill, which is also approved to accept treated wood waste.

Operation of the Interim Trail would generate a similar volume of operational waste from trail users as described above for under Impact UTIL-4 for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* because the same number of trail users are expected, and the same number of trash and recycling collection facilities would be provided along the trail. Therefore, implementation of the Interim Trail would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Solid waste impacts associated with implementation of the optional Interim Trail (Part 1) would be **less than significant**. No mitigation is required.

2) Demolition of the Interim Trail and Rebuilding the Rail Line

Demolition of the Interim Trail and rebuilding of the rail line would also generate construction waste. As stated in **Table 2-4**, demolition of the Interim Trail and rebuilding of the rail line (Part 2) would generate approximately 11,500 cubic yards of construction-related waste. The estimated 11,500 cubic yards of construction waste generated by demolition of the Interim Trail and rebuilding of the rail line (Part 2) would equate to less than 1% of the RRF Landfill's and Buena Vista Landfill's remaining daily capacity. Project waste would go to both landfills in their respective jurisdictions; furthermore, excess construction waste could be disposed of at other landfills outside the area, such as the Monterey Peninsula Landfill. Therefore, demolition of the Interim Trail and rebuilding of the rail line would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. There would be no operational waste associated with demolition of the Interim Trail and rebuilding of the rail line. Solid waste impacts associated with demolition of the Interim Trail and rebuilding of the rail line (Part 2) would be **less than significant**.

3) Construction of the Ultimate Trail Configuration

Construction of the Ultimate Trail Configuration as Part 3 of implementing the optional Interim Trail would be similar to that described above for the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*. Refer to the discussion for Impact UTIL-4, under *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*. This impact would be **less than significant**. No mitigation is required.

Combined Effect of Interim Trail Parts 1, 2, 3

Overall, the combined effects of implementing the optional Interim Trail (Parts 1, 2, and 3) would generate approximately 43,045 cubic yards of combined construction waste, including the removed railroad ties. After applying the 75% solid waste diversion rate to the applicable wastes, solid waste generated by the optional Interim Trail would be reduced to approximately 18,827 cubic yards of construction-related waste, as shown in **Table 3.14-3**. Construction-related waste would be distributed over an estimated 35-year period within three separate construction phases, as described in Section 2.6.2.

Table 3.14-3 Summary of Solid Waste Generation during Construction

Optional First Phase: Trail on the Rail Line (Interim Trail)	Total Amount of Solid Waste
Implementation of Interim Trail	13,600
Demolition of the Interim Trail and Rebuilding the Rail Line	11,500
Construction of the Ultimate Trail Configuration	17,945
Total	43,045
City RRF Landfill Remaining Capacity	4,806,477[a, b]
County Buena Vista Landfill Remaining Capacity	1,766,005 [a, b]

RRF = Resource Recovery Facility

[a] CalRecycle 2019a.

[b] CalRecycle 2019b.

The total amount of construction waste generated by the optional Interim Trail would equate to less than 1% of the RRF Landfill's remaining capacity.[2] Similar to the Ultimate Trail Configuration, it is estimated that that optional Interim Trail would have approximately 3,500 daily users. The optional Interim Trail would also not result in an increase in permanent population or introduce unanticipated growth in the City or County. As such, the amount of operational waste generated by the optional Interim Trail would be similar to the Ultimate Trail Configuration. Therefore, the RRF Landfill would have the capacity to receive all solid waste generated by operation of the optional Interim Trail. Any excess waste could be disposed of at the Buena Vista Landfill, as needed, or transferred to the Monterey Peninsula Landfill in Marina for Parts 2 and 3 once the Buena Vista Landfill is closed. Therefore, the optional Interim Trail would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. The combined solid waste impacts associated with the optional Interim Trail would be **less than significant**. No mitigation required.

Comparison of Proposed Project Impact with/without Optional Interim Trail

The Project without the optional Interim Trail would result in a total of 17,945 cubic yards of construction-related waste. The Project with the optional Interim Trail would result in a total of 43,045 cubic yards of construction-related waste, approximately 140% more construction waste. As stated previously, construction waste generated by the Project would likely be disposed at both the City's RRF Landfill and County's Buena Vista Landfill, dependent on jurisdiction, with excess waste disposed of at the Monterey Peninsula Landfill in Marina.

Therefore, the Project with the optional Interim Trail would result in substantially more construction-related waste than without the Interim Trail due to the two additional construction and demolition activities. However, under either scenario, the Project would generate a total amount of construction waste that equates to less than 1% of the RRF Landfill's remaining capacity.[2] Any excess construction waste could be disposed of at the Buena Vista Landfill, as needed, or transferred to the Monterey Peninsula Landfill in Marina for Parts 2 and 3 once the Buena Vista Landfill is closed.

[2] 1% of RRF Landfill's remaining capacity (4,806,477 cubic yards x.01) = 48,064.77 cubic yards.

Operation of the Project, with and without the optional Interim Trail, would generate a similar amount of operational waste from trail users because both options would have a similar estimated number of trail users, and trash and recycling collection facilities would be provided along the trail.

Therefore, the Project, with and without the optional Interim Trail, would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Overall, solid waste impacts would be **less than significant**. No mitigation is required.

Design Option: East Harbor Connection

The East Harbor Connection would incorporate a switchback trail between the Coastal Rail Trail Segment 9 and the East Harbor service road. As this connection would be a short spur trail of the main alignment and would not include trash receptacles, it can be assumed that any solid waste generated during construction of the East Harbor Connection is included in the solid waste estimates for construction of the Ultimate Trail Configuration.

Therefore, the total amount of construction waste generated by the Ultimate Trail Configuration, including the East Harbor Connection, would equate to 17,945 cubic yards. Waste generated would equate to less than 1% of the RRF Landfill's and Buena Vista Landfill's remaining capacity. This trail connection is near the City/County jurisdictional boundary; thus, project waste could go to either landfill. The East Harbor Connection would not include additional trash or recycling receptacles. As such, operation of this connection would not generate additional operational waste. Therefore, the East Harbor Connection would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste reduction goals. Overall, solid waste impacts related to the East Harbor Connection would be **less than significant**.

3.14.5 Summary Comparison

Comparison of Impacts[a] for Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration) with/without Optional First Phase: Trail on the Rail Line (Interim Trail)

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
UTIL-1. Sufficient water supplies are available to serve the Project, and the Project would not result in the relocation or construction of new or expanded water facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
UTIL-2. The Project would not generate wastewater in excess of existing treatment capacity and would not require or result in the relocation or construction of new or expanded wastewater treatment facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar

Impacts	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)		
		1) Implementation of Interim Trail	2a) Demolition of Interim Trail	2b) Rebuilding the Rail Line
UTIL-3. The Project would not require or result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Substantially similar
UTIL-4. The Project would not generate solid waste in excess of local landfill capacity.	LTS	LTS Similar, more	LTS Similar, more	LTS Substantially similar

[a] The impacts of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* are presented in the first column with the impact determination presented in the second column using the abbreviations identified below. Potentially significant impacts requiring mitigation or determined significant and unavoidable are presented in **bold** with the required mitigation measure indicated below.

The anticipated impacts for the *Optional First Phase: Trail on the Rail line (Interim Trail)* are presented and described in comparison to the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented in the text discussion.

The impacts of Interim Trail Part 3 (Construction of the Ultimate Trail Configuration) would be the same or substantially similar to that identified for *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* in the second column. Therefore, a column for Part 3, Construction of the Ultimate Trail Configuration, of the *Optional First Phase: Trail on the Rail line (Interim Trail)* is not included unless there are notable differences.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

3.15 Effects Found to be Less than Significant

Section 15128 of the *California Environmental Quality Act (CEQA) Guidelines* requires an Environmental Impact Report (EIR) to briefly describe any possible significant effects that were determined not to be significant and, therefore, were not discussed in detail. This section addresses the potential environmental effects of the Project that clearly would not be significant and are not addressed in the preceding sections of this EIR.

The discussion is based on the thresholds contained in Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*, as well as the Initial Study prepared for the Project (**Appendix C**). As described under "Significance Thresholds" in the preceding Sections 3.1 through 3.15, the letters and thresholds correspond with the questions in Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*. Any items not addressed in this section are addressed in Sections 3.1 through 3.15 of this EIR.

3.15.1 Aesthetics

The following threshold pertaining to *Aesthetics* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) was excluded from discussion in Section 3.1, *Aesthetics*. Refer to Section 3.1 for the discussions relevant to Thresholds A, C, and D.

Would the project:

B. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

In the County, SR-1 is designated as the Cabrillo Highway and is considered eligible for state scenic highway designation, but it is not officially designated by Caltrans. The closest portion of the Project corridor to SR-1 is 1.5 miles south of SR-1. No portion of the Project corridor is within or visible from a designated state scenic highway.

Highway users on SR-1 would be too distant to see any of the trail components due to intervening development and mature vegetation. For example, one of the more open views of the Project corridor from SR-1, is where both the highway and Project corridor cross the San Lorenzo River. **Figure 3.15-1** shows the view from the bicycle/pedestrian bridge adjacent to SR-1, facing south toward the Project corridor. As shown from this viewpoint, travelers on SR-1 view the San Lorenzo River and riparian vegetation in the foreground and dense wooded vegetation in the background. The Project corridor is south of this viewpoint but is not visible due to the distance and intervening vegetation.

Further, views from SR-1 on the north side of the pedestrian bridge would be fleeting due to speeds, heavy traffic, and nearby intersections with SR-9 and SR-17.

The Proposed Project, with or without the optional Interim Trail, would result in **no impact** to scenic resources visible from a state scenic highway (Threshold B). No mitigation is required.

Figure 3.15-1, View from State Route 1. Existing Conditions Looking South from the Pedestrian/Bicycle Bridge Overpass, Just South of the SR-1 Overpass, toward the Project corridor and Monterey Bay. Refer to **Figure 3.1-1** for photo location.

3.15.2 Agriculture and Forestry Resources

All the thresholds pertaining to *Agriculture and Forestry Resources* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) are discussed below.

Would the project:

A. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

B. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

C. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

D. Result in the loss of forest land or conversion of forest land to non-forest use?

E. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

The Project corridor is classified as Urban and Build-Up Land, pursuant to the California Department of Conservation Farmland Mapping and Monitoring Program map. The Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The Project corridor is not zoned for agricultural use and does not conflict with any Williamson Act contracts. Additionally, the Project corridor is located in a predominately developed urban environment that is zoned Beach Commercial, Single Family Residence, and Coastal Dependent Related.

The Project would not conflict with existing zoning for forest land, timberland, or timberland production. The Project would not involve any changes to the existing environment that could impact the conversion of Farmland or forest land to non-agriculture or non-forest use.

The Proposed Project, with or without the optional Interim Trail, would result in **no impact** to agriculture and forestry resources (Thresholds A–E). No mitigation is required.

3.15.3 Energy

All the thresholds pertaining to *Energy* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) are discussed below.

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?

Construction of the Project would involve the use of energy. Energy use during construction would be primarily in the form of fuel consumption to operate heavy equipment, light-duty vehicles, machinery, generators for power tools, and truck trips for the import and export of material. Temporary grid power may also be provided to construction trailers or electric construction equipment, depending on the location and construction activity.

Construction activity is necessary for project implementation. The Project would require typical construction practices and would not include any components that would result in wasteful or inefficient use of energy during construction. The Proposed Project with the optional Interim Trail would result in greater energy consumption than without the optional Interim Trail because there would be two additional construction phases, thus increasing total construction and energy use. However, energy would be consumed as necessary for construction and would not be wasteful or inefficient.

Following construction, operation of the Project would be an active transportation and recreation corridor for bicycles and pedestrians. It would increase the feasibility of non-motorized transportation and would contribute to a regional net decrease in fuel consumption from vehicle trips. Minimal new lighting would be required and would be solar-powered where feasible. Lighting connected to the electrical grid would be energy efficient LEDs. Therefore, operation of the Project would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. The Project would likely result in net benefit to regional energy consumption.

The Proposed Project, with or without the optional Interim Trail, would not conflict with or obstruct plans for renewable energy or energy efficiency. Impacts related to energy (Thresholds A–B) would be **less than significant**. No mitigation is required.

3.15.4 Geology and Soils

The following thresholds pertaining to *Geology and Soils* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) were excluded from discussion in Section 3.5, *Geology and Soils*. Refer to Section 3.5 for the discussions relevant to Thresholds A (2–4), B, C, D, and F.

Would the project:

A. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

   1. 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?

E. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The Project corridor is located in a seismically active area that would experience strong ground shaking following an earthquake along any one of several nearby faults, including the Ben Lomond, the Monterey Bay-Tularcitos Fault, Zayante-Vergeles Fault, San Andres Fault, and the Sargent Fault. However, known earthquake faults are not present directly within the Project corridor. Therefore, the rupture of a known earthquake fault, as delineated on the Alquist-Priolo Earthquake Fault Zoning Maps, would not be expected. Furthermore, implementation of the Proposed Project, with or without the optional Interim Trail, would not include construction of habitable structures and therefore would not expose residents to a risk of injury or death involving fault rupture.

Proposed trail infrastructure (e.g., viaducts, bridge, cantilever) would incorporate seismic design parameters developed from the Caltrans ARS design spectra (Pacific Crest Engineers 2022). In addition, the proposed fencing, guardrails, and retaining walls would be constructed in accordance with the requirements of the California Building Code and would be designed to withstand adverse effects from strong ground shaking. Therefore, ground rupture, and impacts that would be associated with this phenomenon on human life, are not anticipated.

Implementation of the Proposed Project would not include or create a need for the use of septic tanks, and would not require alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Therefore, the impact of the Proposed Project, with or without the optional Interim Trail, would be **less than significant** for Thresholds A1 and E. No mitigation is required.

3.15.5 Hazards and Hazardous Materials

The following thresholds pertaining to *Hazards and Hazardous Materials* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) were excluded from discussion in Section 3.7, *Hazards and Hazardous Materials*. Refer to Section 3.7 for the discussions relevant to Thresholds A, B, C, and D.

Would the project:

E. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise 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, either directly or indirectly, to a significant loss, injury or death involving wildland fires?

The Project corridor is not located within an airport land use plan, or within 2 miles of a public or private airport. The nearest airports to the Project corridor are private and include the Monterey Bay Academy Village Airport, located approximately 9 miles southeast of the Project corridor, and the Bonny Doon Village Airport, located approximately 9.5 miles northwest of the Project corridor. Given this distance to the airports, the Project would not result in an airport-related safety hazard to construction workers or future trail users. The closest public airport to the Project corridor is the Watsonville Municipal Airport located approximately 11 miles southeast of the eastern portion of Segment 9. The Project corridor is not located within the Watsonville Municipal Airport Master Plan area. Therefore, the Project would not facilitate any activities that could pose a safety hazard to

people residing, working or utilizing the Project corridor or adjacent lands. The Proposed Project, with or without the Interim Trail, would result in **no impact** relative to airport land use plans (Threshold E). No mitigation is required.

The Project would not impair implementation of or physically interfere with the County of Santa Cruz Operational Area Emergency Management Plan or City of Santa Cruz Emergency Operations Plan. The trail alignment would not alter existing transportation facilities that have been identified as emergency routes, have been otherwise identified for use during an emergency, or existing emergency plan routes. The trail alignment would intersect existing roadways at Mott Avenue, Seabright Avenue, 7th Avenue, Live Oak Avenue, El Dorado Avenue, and 17th Avenue; however, the Project does not include any physical elements that would block any existing emergency plan routes. Therefore, the Proposed Project, with or without the optional Interim Trail would result in a **less than significant** impact related to implementation of an adopted emergency response or evacuation plan (Threshold F). No mitigation is required.

The Project would not expose people or structures to a significant loss, injury, or death involving wildland fires. The Project is a 2.2-mile paved bicycle and pedestrian system that would extend along the rail corridor through a predominately developed urban area. The Project corridor is not located in an identified State Responsibility Area or lands classified as a very high hazard severity zone (CAL FIRE 2008). However, a small portion of the Project corridor that extends through Twin Lakes State Beach is located in a Local Responsibility Area for fire management and High Fire Hazard Area. The risk of exposing people or structures to loss involving wildland fires is low for the following reasons. The Project does not include structures or facilities that would have occupants. It is a transportation and recreation facility whereby trail users would be passing through and would not have prolonged exposure to any one area, including the Twin Lakes State Beach area where the Project corridor is located. The Project is within the RTC-owned rail corridor that is subject to routine maintenance including vegetation trimming and removal. Once constructed, trail maintenance activities would also include vegetation trimming, tree removal, and weed control. Also refer to Section 3.15.12, *Wildfire*. Further, as discussed in Section 3.11, *Public Safety and Services* (Impact PUB-1), the Central Fire District of Santa Cruz County would be able to provide adequate emergency response; and, in fact, anticipates the increased visibility through vegetation removal and trail installment could reduce inappropriate activities along the Project corridor that could start fires. Therefore, the impact related to exposure of people or structures to loss, injury or death involving wildland fires (Threshold G) would be **less than significant**. No mitigation is required.

3.15.6 Mineral Resources

All thresholds pertaining to *Mineral Resources* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) are discussed below.

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?

The Project would not result in loss of availability of a known mineral resource or a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan, as there are no known mineral resources that are located along the Project corridor, according to the City and County General Plans (City of Santa Cruz 2012; Santa Cruz County 1994).

Implementation of the Project would also not result in a change in access or ability to recover known mineral resources within the City or County. Therefore, the Proposed Project, with or without the optional Interim Trail, would result in **no impact** related to mineral resources (Thresholds A and B). No mitigation is required.

3.15.7 Noise

The following threshold pertaining to *Noise* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) was excluded from discussion in Section 3.10, *Noise*. Refer to Section 3.10 for the discussions relevant to Thresholds A and B.

Would the project:

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, expose people residing or working in the project area to excessive noise levels?

As stated under 3.15.5, *Hazards and Hazardous Materials*, the Project corridor is not included in an airport land use plan, or within 2 miles of a public airport. The closest airports are: Monterey Bay Academy Airport (private) 9 miles to the southeast, Bonny Doon Village Airport (private) located 9.5 miles to the northwest, and Watsonville Municipal Airport (public) located 11 miles southeast. Therefore, the Proposed Project, with or without the optional Interim Trail, would result in **no impact** regarding the exposure of people utilizing the trail, or constructing and maintaining the trail, to excessive noise related to the operation of either a private or public air strip (Threshold C). No mitigation is required.

3.15.8 Population and Housing

All the thresholds pertaining to *Population and Housing* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) are discussed below.

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?

The Project does not include any components that would induce unplanned population growth, either directly by constructing new homes or businesses, or indirectly by extending roads or other infrastructure that would support further population growth in the area. The new trail would enable the existing population to walk and use bicycles, instead of their cars, as an alternative transportation mode and for recreation. The trail would be located within the rail corridor, and no people or housing would be displaced.

The Proposed Project, with or without the optional Interim Trail, would not induce population growth (Threshold A) or displace people or housing (Threshold B); therefore, there would be **no impact**. No mitigation is required.

3.15.9 Public Safety and Services

The following checklist items excluded from discussion in Section 3.11, *Public Safety and Services*, are discussed below.

The following Threshold A pertaining to *Public Safety and Services* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) applies to several services, including: fire protection, police protection, schools, parks, and other public facilities, including healthcare facilities and libraries. The discussion of schools and libraries was excluded from Section 3.11 and is provided below.

Would the project result in:

A. Substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

   Schools?

   Libraries?

As a multi-use trail, the Project would not increase the residential or employment populations that would in turn use schools or libraries in the City of Santa Cruz or Santa Cruz County. Rather, it would provide recreational opportunities for current residents and an alternative to vehicle travel. While the trail is anticipated to accommodate an estimated 3,500 daily trail users, these trail users would not increase demand for schools or libraries because they would be primarily existing residents who already use these facilities. Therefore, the impact of the Proposed Project, with or without the optional Interim Trail, would be **less than significant**. No mitigation is required.

3.15.10 Recreation

All the thresholds pertaining to *Recreation* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) are discussed below. The potential impact to park facilities is also discussed in Section 3.11 under Impact PUB-3.

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?

The Proposed Project, with or without the optional Interim Trail, would enhance recreation opportunities by improving existing facilities (sidewalk and cycle track) along Segment 8 and providing new facilities (multi-use trail) along Segment 9. The new trail along Segment 9 would provide additional bicycle and pedestrian access to existing neighborhood and regional parks and recreational facilities along the Project corridor, including Twin Lakes State Beach, Santa Cruz Harbor, and Simpkins Swim Center. Therefore, City and County residents and visitors currently using these facilities would have an additional non-vehicular means for traveling to and accessing these facilities. Although improved access could result in a minor increase in the use of these recreation facilities, it is not expected to be a substantial increase, such that it could create or accelerate physical deterioration of these facilities. Additionally, as described under Section 3.15.8, *Population and Housing*, the Project would not result in additional population that would increase the demand on existing facilities.

Therefore, the impact of the Proposed Project, with or without the optional Interim Trail, on existing recreational facilities (Threshold A) would be **less than significant**. No mitigation is required.

The Proposed Project is a trail that would serve as a recreational facility, as well as an alternative (non-vehicular) transportation facility for bicyclists and pedestrians, the potential impacts of which are addressed in Sections 3.1 to 3.15 of this EIR. The Project does not include additional recreational facilities, nor require the construction or expansion of recreational facilities, that could result in adverse physical effects on the environment (Threshold B). Therefore, the impact of the Proposed Project, with or without the optional Interim Trail, would be **less than significant**. No mitigation is required.

3.15.11 Transportation

The following checklist items excluded from discussion in Section 3.12, *Transportation,* are discussed below.

The following thresholds pertaining to *Transportation* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) were excluded from discussion in Section 3.12. Refer to Section 3.12 for the discussions relevant to Thresholds B and C.

Would the project:

A. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

D. Result in inadequate emergency access?

The Proposed Project is identified in the Santa Cruz County Regional Transportation Commission (RTC) 2045 RTP, the Monterey Bay Sanctuary Scenic Trail Master Plan, the Santa Cruz County Active Transportation Program, and the City of Santa Cruz Active Transportation Plan (RTC 2013, 2022; Santa Cruz County 2022; City of Santa Cruz 2017). Furthermore, the transportation goals detailed within the County General Plan are related to developing a bikeway network that maximizes the safety and convenience of all users, encouraging pedestrian travel, and coordinating with other jurisdictions to establish a network that is functional throughout region. Similarly, the transportation goals detailed within the City General Plan are related to accommodating multiple transportation modes and connecting activity centers with pedestrian and bicycle paths. As such, the Proposed Project, with or without the optional Interim Trail, would be consistent with the applicable goals and policies of both the Santa Cruz County General Plan and the City of Santa Cruz General Plan (Santa Cruz County 1994; City of Santa Cruz 2012). Therefore, there would be **no impact** related to conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities (Threshold A). No mitigation is required.

According to the Central Fire District of Santa Cruz County (CFD) (Mack 2022), the minimum width requirement for fire vehicle access is 9 feet, 6 inches. The minimum sufficient width for ambulance access is 8 feet, but ambulances can navigate through a seven-foot-wide chokepoint when necessary if approved by the department. When an ambulance cannot reach a certain area due to access constraints, foot travel with a wheeled gurney is an acceptable alternative access method during emergencies.

In Segment 8, the existing on-street cycle track along Beach Street is 8 feet wide, the existing sidewalk is generally 12 feet wide. The Proposed Project, with or without the optional Interim Trail, would not alter these widths nor the roadway width of Beach Street. Thus, emergency access would be similar to existing conditions.

In Segment 9, for the Ultimate Trail Configuration, the typical width of the paved trail would be 12 feet wide. There would be some reductions, ranging from 9 feet, 6 inches, to 10 feet, 4 inches, due to water crossings and right-of-way constraints (refer to *Trail Width and Materials* in Section 2.4.1, *Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)*). For the optional Interim Trail, the trail would be wider, with a typical width of 16 feet wide, narrowing to between 13 to 16 feet in some locations (refer to *Trail Width and Materials* in Section 2.4.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*). Based on consultation with emergency responders, including the CFD (Mack 2022), emergency vehicles would be able to access the entirety of the Proposed Project, with or without the optional Interim Trail, from existing roadways and planned trail connections described in Sections 2.4.1 and 2.4.2. Thus, there would be sufficient emergency access for responders and first response equipment. Further, CFD suggests that the trail would result in an overall improvement to emergency access along the rail corridor by providing paved access through the Project corridor (Mack 2022). Therefore, the impact of the Proposed Project, with or without the optional Interim Trail, related to inadequate emergency access (Threshold B) would be **less than significant**. No mitigation is required.

3.15.12 Wildfire

All the thresholds pertaining to *Wildfire* (from Appendix G, *Environmental Checklist Form*, of the *CEQA Guidelines*) are discussed below.

Would the project:

A. Substantially impair an adopted emergency response plan or emergency evacuation plan?

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?

The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program assesses the amount and extent of California's forests and rangelands, analyzes their conditions, and identifies alternative management and policy guidelines. According to the Fire Hazard Severity Zone Maps prepared by the Fire and Resource Assessment Program, the Project corridor is not within an identified State Responsibility Areas or lands classified as a very high hazard severity zone (CAL FIRE 2008). The Project corridor is located in a Local Responsibility Area for fire management, and a small portion of the corridor north of Schwann Lagoon is located in a Local Responsibility Area High Fire Hazard Area (CAL FIRE 2008). The Project corridor is along the RTC-owned rail corridor, which is routinely maintained including vegetation trimming and removal.

The Proposed Project, with or without the optional Interim Trail, would not impair the County of Santa Cruz Operational Area Emergency Management Plan or City of Santa Cruz Emergency Operations Plan. The trail alignment would not alter existing transportation facilities that have been identified as emergency routes, have been otherwise identified for use during an emergency, or existing emergency plan routes. The Project corridor would intersect existing roadways at Mott Avenue, Seabright Avenue, 7th Avenue, Live Oak Avenue, El Dorado Avenue, and 17th Avenue; however, neither trail alignment proposes adding any physical elements which would block any existing emergency plan routes. Therefore, the impact of the Proposed Project, with or without the

optional Interim Trail, relative to emergency response plan and evacuation plan (Threshold A) would be **less than significant**. No mitigation is required.

The Project is a 2.2-mile paved bicycle and pedestrian system that would extend along the rail corridor through a predominately developed urban area, from the Beach Street/Pacific Avenue roundabout on the west to the eastern side of 17th Avenue on the east. A portion of the trail extends along the north side of Twin Lakes Beach State Park, which includes dense vegetation and unpaved walking trails. The Project does not include housing or other structures that would result in permanent occupants along the Project corridor. There is ongoing vegetation trimming and removal along the RTC-owned rail corridor, which would continue. Once the trail is constructed, there would be additional routine maintenance of vegetated portions of the trail, including weed removal, tree/shrub trimming and fallen tree removal (refer to *Trail Maintenance* in Section 2.5, *Project Operation and Maintenance*), that would prevent overgrowth that could potentially fuel wildfire. Therefore, the Proposed Project, with or without the optional Interim Trail, would not expose project occupants to pollutant concentrations from a wildfire (Threshold B), and the impact would be **less than significant**. No mitigation is required.

The Project would not require the installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that would exacerbate the fire risk or impact the environment. In addition, as described above, trail maintenance activities would involve routine maintenance of vegetated portions of the trail, including weed removal, tree/shrub trimming and fallen tree removal, that would prevent overgrowth that could potentially fuel wildfire. Therefore, the Proposed Project, with or without the optional Interim Trail, would not result in additional project elements that would exacerbate wildfire risks (Threshold C), and the impact would be **less than significant**. No mitigation is required.

The Project would not 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 for the following reasons. The Project does not include permanent structures that would be occupied by people, and trail users would be transient with short-term exposure to any risks. As described above and in Section 3.15.5, *Hazards and Hazardous Materials*, the impact related to exposure of people or structures to loss, injury or death involving wildland fires (Threshold G) would be less than significant. As described in Section 3.5, *Geology and Soils* (Impact GEO-2), there are no mapped landslides within the Project corridor, and the potential impact associated with landslides would be less than significant. As described in Section 3.8, *Hydrology and Water Quality* (Impact HYD-3), construction activities would result in ground disturbance that could cause localized alteration of drainage patterns and temporarily increase in erosion and sedimentation, but implementation of the best management practices and compliance with the National Pollutant Discharge Elimination System-required Stormwater Pollution Prevention Plan would reduce this impact to less than significant. Post construction, stormwater would surface flow from the new and replaced impervious surfaces into the existing drainage system or natural material swales included in the trail design. All off-site flows would match existing condition drainage patterns. Any off-site flows that would be intercepted by existing or proposed storm drain infrastructure (e.g., catch basins, sidewalk underdrains, V ditches, French drains, swales) would be piped in the new storm drain system under the proposed trail to an outlet structure at an existing storm drain system or creek downstream. In addition, the Project corridor is relatively flat in nature and is far from any elevated features. Therefore, it is unlikely that any downslope or downstream impacts associated with post-fire slope instability would occur. Therefore, the Proposed Project, with or without the optional Interim Trail, would not 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 (Threshold D). The impact would be **less than significant**. No mitigation is required.

4 Other CEQA-Required Discussions

This chapter provides a cumulative impact analysis and discusses growth-inducing impacts, irreversible environmental impacts, and significant and unavoidable impacts that could be caused by the **Coastal Rail Trail Segments 8 and 9 Project** (Project).

4.1 Cumulative Impact Analysis

4.1.1 Methodology

The term "cumulative impacts" refers to "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (*CEQA Guidelines*, Section 15355).

A cumulative impact can result from the combination of two or more individually significant impacts, or the combination of two or more impacts that are individually less than significant but constitute a significant change in the environment when considered together. To analyze a proposed project's contribution to cumulative impacts, California Environmental Quality Act (CEQA) requires the lead agency to identify past, present, and probable future projects in the vicinity, summarize their effects, identify the incremental contribution of the proposed project to any significant cumulative impacts occurring in the project region, and recommend mitigation measures as appropriate (*CEQA Guidelines*, Section 15130[b]). Mitigation measures should focus on any cumulatively considerable incremental contribution from the proposed project to any significant cumulative effect created by the past, present, and probable future projects, together with the proposed project or alternative (*CEQA Guidelines,* Section 15130[a][3]; see also *CEQA Guidelines,* Section 15126.2[a][4]).

Section 15130 of the *CEQA Guidelines* permits two approaches for identifying cumulative projects to analyze. The first is the "list" approach, based on a list of past, present, and probable future projects that produce related or cumulative impacts. The list may include projects both within and outside the Rail Trail Segments 8 and 9 Project area. The second is the "projections" approach, based on a summary of projections contained in an adopted plan or related planning document, such as a General Plan, or in an Environmental Impact Report (EIR) prepared for such a plan. A reasonable combination of the two approaches may also be used.

This EIR uses a combination of the "list" and "projections" approaches. **Table 4-1** presents the list of cumulative projects that are considered in the discussions below for each environmental topic. The list of projects was provided by the City of Santa Cruz (City), Santa Cruz County (County), and Santa Cruz Regional Transportation Commission (RTC).

In addition to the list of cumulative projects, the projections approach is used for some issue areas where appropriate. For this method, the analysis considers buildout of the City's General Plan and Local Coastal Program (adopted June 2012, as amended through October 2019) and the County's General Plan and Local Coastal Program (adopted May 1994). The General Plan documents provide a framework and guide for making decisions about urban development and transportation

improvements within the City and County, respectively. Accordingly, buildout under the City and County is considered in this cumulative analysis.

The cumulative impact analysis for each environmental or resource topic considers the effects of cumulative projects located in an appropriate geographic area, which varies by resource topic. For example, the appropriate geographic area for aesthetic impacts is the viewshed from the Project corridor, which is the scope of human eyesight in the vicinity of the corridor. The appropriate geographic area for air quality impacts is the North Central Coast Air Basin, which covers an area of more than 5,100 square miles.

For each resource topic, cumulative impacts were determined in the following manner:

1. Determine whether there is a significant cumulative impact under future conditions with the Project; if yes, then
2. Determine if the Project would or would not make a cumulatively considerable (i.e., significant) contribution to the identified significant cumulative impact.

The cumulative impacts for the resource topics analyzed in Chapter 3, *Environmental Impact Analysis*, are discussed in Sections 4.1.2 through 4.1.18 and summarized in **Table 4-2**. In the discussions, "Project" refers to the City's *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*, which is part of the Project. Any differences in the cumulative impact is addressed in the discussion.

In summary, the Project's contribution to cumulative impacts would not be considerable, except the impacts to aesthetics (disruption of scenic quality and vistas from tree removal) and biological resources (tree removal and fragmentation of habitat and wildlife corridors) associated with tree removal. Additionally, the optional Interim Trail would result in a cumulatively considerable contribution to a significant historical resource impact as a result of the removal of the Santa Cruz Branch Line.

Table 4-1 List of Cumulative Projects

Project Name/Type	Location	Description	Status
City of Santa Cruz Projects[a]			
Coastal Rail Trail Segment 7 Phase 2	Bay Street to Beach Street/Pacific Avenue roundabout	Bicycle/pedestrian multi-use path, as part of the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan. Phase 1 between Natural Bridges Drive and Bay Street is already constructed.	Construction 2022–2023
Highway 1/9 Intersection Improvements	Highway 1/9 intersection	Intersection widening, adding turn lanes.	Construction 2021–2022
Murray Street Bridge Seismic Retrofit/Barrier Rail	Murray Street over Santa Cruz Harbor	Bridge seismic retrofit, deck widening, barrier replacement, widening the south (coastal) side sidewalk to over 7.5 feet, and widening the existing bike lanes to 6 feet wide.	Construction 2023–2025
San Lorenzo River Lagoon Culvert	San Lorenzo River mouth	Culvert installation to provide a water height control system to prevent the unnatural flooding and reduce lagoon breaches.	Construction 2022

Table 4-1 List of Cumulative Projects

Project Name/Type	Location	Description	Status
Wastewater Treatment Facility Water Treatment and Pure Water Soquel Pipe Conveyance	110 California Street and roadways between the Santa Cruz facility and Chanticleer Water Purification Center	Construction of a Title 22 treatment facility and installation of ~8 miles of pipeline to carry recycled water from the Santa Cruz facility to the upcoming Chanticleer Water Purification Center and three seawater intrusion prevention wells, as part of the Soquel Creek Water District's Pure Water Soquel Project.	Construction 2022–2023
Downtown Library & Affordable Housing Project	Lot 4 between Cathcart, Cedar and Lincoln Streets	Construction of a new library, childcare facility, 100–125 housing units, and 310 parking spaces at City-owned parking Lot 4.	In design. Construction anticipated 2024–2026
Mixed use	130 Center Street	Six-story, mixed-use building with 233 Single Room Occupancy units and 2,618 sq. ft. of ground floor commercial space on a parcel.	Design approved. Construction anticipated 2023–2024
Mixed use	524 Center	Design Permit for a mixed-use supportive housing development consisting of 2,210 square feet of commercial retail space, 65 residential units, and construction of a public paseo on property located in the CBD (Central Business District) zone district.	Design approved. Construction anticipated 2023–2024
Mixed use	119 Coral Street	Residential Demolition Authorization Permit to demolish six transitional housing units and Design and Special Use Permits to construct 120 studio units to be used as permanent supportive housing and one manager's unit with a ground floor recuperative care center, behavioral health clinic, and a residential lobby with shared residential space and service provision space in the CC (Community Commercial) Zone District.	Design approved. Construction anticipated 2023–2024
Industrial	135 Dubois	Project Description: Design permit, Boundary Adjustment, and Sign Permit to combine two parcels and construct a 107,845 square foot self-storage building. (Statutory Exemption).	Design approved. Construction anticipated 2023–2024
Residential	126 Eucalyptus	Demolish two existing school buildings (approx. 28,417 square feet) and construct a 76 unit (including 15 full dwelling units) senior housing facility on a site.	Pending design approval. Construction anticipated 2024–2025
Mixed use	530 Front	Permits to demolish existing commercial buildings and construct a mixed-use condominium building with 170 residential dwelling units and 10,338 square feet of commercial space on a site.	Pending design approval. Construction anticipated 2024-2025
Mixed use	Pacific/Front	Demolish five commercial buildings, and construct a six-story, 315,698 square foot mixed-use building with 205 residential apartments and 10,656 square feet of ground floor.	Construction 2023–2024

Table 4-1 List of Cumulative Projects

Project Name/Type	Location	Description	Status
Residential	1930 Ocean Street	32-unit residential condominium development.	Design approved. Construction anticipated 2024–2025
Mixed use	902 Pacific Ave	Demolish an existing structure and construct a new downtown Santa Cruz Pacific Station Metro Station including 22 bus bays, pedestrian circulation and crosswalks, and solar array canopies on a parcel located within the CBD/CZ-O/FP-O (Central Business District/Coastal Zone Overlay District/Floodplain District) zone district and within the Front Street/Riverfront Corridor subareas of the Downtown Plan.	Design approved. Construction anticipated 2024–2025
Mixed use	818 Pacific Ave	Demolish three commercial buildings and construct a seven-story, mixed-use building with 70 affordable residential apartments, 15,228 square feet of ground floor commercial and residential amenity space, and 15,665 feet of medical office space on the second floor.	Design approved. Construction anticipated 2023–2024
Mixed use	1013 Pacific Ave	Demolition of the existing vacant mixed-use building, and construction of a four-story building with 17 residential condominiums and 4,342 square feet of ground floor commercial space.	Design approved. Construction anticipated 2023–2024
Mixed use	2035 Pacific Ave	Design Permit and Slope Variance to construct a mixed-use building that includes 3,777 square feet of ground floor office space and 26 units above.	Pending design approval. Construction anticipated 2024–2025
Mixed use	418 Front	Combine five parcels, demolish two commercial and construct a seven-story, mixed-use building with 175 residential condos and 11,498 square feet of ground floor and levee front commercial space on site.	Design approved. Construction anticipated 2023–2024
Mixed use	513 Soquel	Demolish the existing structures and construct three new buildings, including a five-story, mixed-use building; a five-story residential building; and a three-story residential building consisting of 43 residential units and 1,166 sq. ft. of commercial space.	Pending design approval. Construction anticipated 2024–2025
Mixed use	831 Water Street	One four-story and one five-story mixed-use buildings with 145 residential apartments and ground floor commercial space.	Construction anticipated 2024–2025
Mixed use	190 West Cliff	Construct a four-story mixed-use project consisting of two levels of underground parking, approximately 14,000 square feet of ground level commercial, and 89 residential condominium units at 190 West Cliff Drive.	City permit approved. Appealed to Coastal Commission. Construction anticipated 2024–2025

Table 4-1 List of Cumulative Projects

Project Name/Type	Location	Description	Status
County of Santa Cruz Projects[b]			
Medical Office Building Project	5940 Soquel Ave., Santa Cruz	New four-story medical office building measuring approximately 60 feet in height to finished roof and approximately 74 feet to top of mechanical screens on the rooftop. The proposed building would provide approximately 160,000 gross square feet of medical office use for specialty outpatient services.	Construction anticipated late 2022–2024
Pure Water Soquel: Groundwater Replenishment and Seawater Intrusion Prevention Project	Multiple	Recycled water will be purified at the new Chanticleer Water Purification Center and transported via pipeline to seawater intrusion prevention wells. The Project includes facilities in portions of Santa Cruz, Capitola, Live Oak, Soquel, and Aptos.	Construction 2022–2023
Dominican Hospital Planned Unit Development	1555 Soquel Drive	Establishing a Planned Unit Development for construction of an approximately 84,000 square foot addition to the existing hospital facility. Project includes construction of a new surgery center, reconfiguration of the existing emergency room, and construction of a three-story parking structure.	Project approved. Construction anticipated 2022–2024
Arana Sewer Trunk Line Replacement Project	Soquel Avenue and La Fonda Avenue	The project involves replacement of approximately 2,900 linear feet of aging and deteriorated sewer trunk line and associated manholes between Brookwood Drive and La Fonda Avenue.	Project not yet approved Construction anticipated 2023–2024
Valencia Creek Sewer Relocation Project	Valencia Creek near Soquel Drive, Aptos	Approximately 535 feet of gravity sanitary sewer would be abandoned in-place. Approximately 1,355 feet of new gravity sanitary sewer will be constructed.	Project approved in 2021. Construction anticipated 2023
Sustainability Policy and Regulatory Update	Santa Cruz County	Update of the County's General Plan/Local Coastal Program and County Code (Sustainability Update).	Environmental phase. No construction for General Plan update
9041 Soquel Drive, Aptos Mixed Use project	9041 Soquel Drive, Aptos	Construction of ~10,800 sf mixed-use building for office space and three residential units. A portion of the parking lot and an associated retaining wall encroach into the riparian corridor within the arroyo along Valencia Creek.	Environmental phase. Construction anticipated 2022–2024
Coastal Rail Trail Segments 10 and 11	Santa Cruz Branch Rail Line, between 17th Avenue and State Park Drive	Construct 4.7 miles as part of the MBSST Network Master Plan.	Environmental phase. Construction anticipated 2025–2026
Aptos Branch Library	7695 Soquel Dr, Aptos	Demolition of existing library and construction of new larger library.	Construction 2022–2023
Soquel Dr Buffered Bike Lane and Congestion Management Project	Soquel Drive, between La Fonda Ave and State Park Dr	Pedestrian and bicycle improvements along 5.6 miles of the busiest segment of Soquel Drive from La Fonda Avenue to State Park Drive.	Construction anticipated 2023–2024

Table 4-1 List of Cumulative Projects

Project Name/Type	Location	Description	Status
Santa Cruz County Regional Transportation Commission[c]			
Highway 1 41st to Soquel Aux Lanes, Bus-on-Shoulder, and Chanticleer Bike/Ped Overcrossing	Highway 1, between 41st Avenue and Soquel Drive	Construct northbound and southbound auxiliary lanes and bus-on-shoulder improvements between the 41st Avenue and Soquel Avenue/Drive interchanges, and construct a new bicycle and pedestrian overcrossing at Chanticleer Avenue.	Construction anticipated 2022–2024
Highway 1 Bay-Porter to State Park Aux Lanes, Bus-on-Shoulder, and Mar Vista Bike/Ped Overcrossing	Highway 1, between Bay/Porter and State Park Drive	Construct northbound and southbound auxiliary lanes and bus-on-shoulder improvements between the Bay Ave/Porter St to State Park Dr, and construct a new bicycle and pedestrian overcrossing at Mar Vista.	Construction anticipated 2023–2025
Highway 1 State Park to Freedom Aux Lanes, Bus-on-Shoulder, and Coastal Rail Trail Segment 12	Highway 1, between State Park Drive and Freedom Blvd	Construct northbound and southbound auxiliary lanes and bus-on-shoulder improvements between the State Park Drive and Freedom Boulevard interchanges, replace the two existing railroad bridges between the State Park Drive and Rio del Mar interchanges, widen the Aptos Creek bridge, and construct Coastal Rail Trail Segment 12 from State Park Dr to Rio Del Mar Blvd.	Environmental complete in 2023. Construction anticipated 2025–2026
Coastal Rail Trail Segment 5	Santa Cruz Branch Rail Line, between Wilder Ranch and Davenport	Construct 7.5-mile multi-use bicycle and pedestrian trail, as part of the MBSST Network Master Plan.	Construction anticipated 2024
Coastal Rail Trail Segments 13–17, Segment 18 (Phases 2 & 3), Segments 19–20	Santa Cruz County, Rio Del Mar to Pajaro River	Construct multi-use bicycle and pedestrian trail between Rio Del Mar and Pajaro River, as part of the MBSST Network Master Plan.	Construction 2025–2035
Rail Service	Santa Cruz Branch Rail Line	RTC is planning for development of electric rail service on the SCBRL.	Project development 2023–2035
Rail Corridor Maintenance Vegetation Trimming and Removal	Santa Cruz Branch Rail Line	Vegetation/tree trimming and/or removal, as needed to clear culverts, regrade ditches, and maintain the rail corridor. As part of the RTC's routine maintenance, there will be continued vegetation/tree trimming and removal, including potential removal of an unspecified number trees that present hazards or are in poor condition, such that they are a threat to the integrity of the rail line, trail, and/or public safety.	Ongoing

[a] The list of projects was first developed with input from the City of Santa Cruz Planning staff (Mike Ferry) and Public Works staff (Chris Schneiter), July 7, 2022.

[b] The list of projects was developed by first identifying projects listed on the Santa Cruz County website and then refined by the County's Public Works Department (Matt Machado). The list was then reviewed at updated by Rob Tidmore, July 7, 2022.

[c] The list of projects was first developed by identifying projects listed on the Santa Cruz County Regional Transportation Commission website and then refined by staff (Grace Blakeslee), July 13, 2022.

Table 4-2 Summary of Project Contribution to Significant Cumulative Impacts

Resource Topic	Significant Cumulative Impact from Planned Development and Projects Listed in Table 4-1	Project Contribution
Aesthetics	Increased development in open spaces disrupting scenic vistas	Considerable, from tree removal
	Increased light and glare	Not considerable
Air Quality	Emission of criteria pollutants from project construction and operation	Not considerable
Biological Resources	Loss of trees, including Significant and Heritage Trees, and fragmentation of habitat and wildlife corridors	Considerable, from tree removal and loss of wildlife movement habitat
Cultural Resources	Removal of rail line eligible for federal, state, and local designation as a historical resource	
	Ultimate Trail Configuration:	Not considerable
	Optional Interim Trail:	Considerable, from rail removal
Energy	No significant cumulative impact	No considerable
Geology and Soils	No significant cumulative impact	Not considerable
Greenhouse Gas Emissions/Climate Change	Statewide GHG emissions	Not considerable
Hazards and Hazardous Materials	No significant cumulative impact	Not considerable
Hydrology and Water Quality	No significant cumulative impact	Not considerable
Land Use and Planning	No significant cumulative impact	Not considerable
Noise	Increased ambient vehicle noise levels	Not considerable
Public Safety and Services	Increased use of public services could reduce available services	Not considerable
Recreation	Increased use and deterioration of existing facilities and expansion of new recreational facilities	Not considerable
Transportation	Increased vehicle miles traveled, traffic, potential hazards during construction, and emergency access impairment	Not considerable
Tribal Cultural Resources	No significant cumulative impact	Not considerable
Utilities and Service Systems	Increased impervious surface could alter drainage patterns and require new or expanded drainage facilities	Not considerable
Wildfire	No significant cumulative impact	Not considerable

4.1.2 Aesthetics

The cumulative setting for aesthetics covers the entire coastal area visible to and from the Project corridor, stretching from SR-1 and adjacent lands to the coastline. This geographic extent is appropriate because the cumulative viewshed is limited to the scope of human eyesight in the vicinity of a project site.

IMPACT AES-C CUMULATIVE DEVELOPMENT MAY RESULT IN SIGNIFICANT CUMULATIVE AESTHETIC IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVE CONSIDERABLE EXCEPT FOR CUMULATIVE IMPACTS TO SCENIC QUALITY DUE TO THE REMOVAL OF MATURE TREES.

Scenic Vistas. Currently, the planned Murray Street Bridge Seismic Retrofit/Barrier Rail Project is adjacent to the Project corridor. This adjacent cumulative development could lead to the conversion of open space areas along the Project corridor. Consequently, the increased development in open spaces disrupting scenic vistas could result in a significant cumulative impact to scenic vistas. Because the Project would remove approximately 13 trees that add to the scenic quality of enjoyed vistas in this area, the Project's contribution to this impact **would be cumulatively considerable**.

Scenic Highways. There are no officially designated state scenic highways in Santa Cruz County, thus, there would be no significant cumulative impact related to scenic highways including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Subsequently, the Project's contribution to cumulative impacts associated with state scenic highways **would not be cumulatively considerable**.

Applicable Regulations. As detailed in **Table 4-1**, the past, present, and reasonably foreseeable projects in the City and County are primarily related to infrastructure improvements and residential or mixed-use projects. Cumulative development in the Santa Cruz County region would be required to comply with any policies established by relevant planning documents that govern scenic quality, such as the Santa Cruz County General Plan, the Santa Cruz County Municipal Code, the City of Santa Cruz General Plan, and the City of Santa Cruz Municipal Code. Therefore, there would be no cumulative impact related to conflict with applicable regulations that govern scenic quality. As the Project would also be required to comply with these policies, the Project's contribution to impacts regarding conflict with applicable regulations that govern scenic quality **would not be cumulatively considerable**.

Light and Glare. Cumulative effects of lighting are visible over a wide area, and collective lighting from denser development can create skyglow. Planned development would ultimately increase the effects of skyglow in the Santa Cruz region, and there would be a cumulative impact related to nighttime lighting. The Project corridor is located in an urbanized setting. As described under Impact AES-4 in Section 3.1, *Aesthetics*, implementation of the Project would introduce a minor amount of new lighting sources, such as exterior pedestrian lighting. However, any new lighting would be "dark sky compliant" in that it would minimize light pollution and offensive glare by directing light downward so it would not spill beyond the trail. Therefore, the Project's contribution to cumulative light and glare impacts **would not be cumulatively considerable.**

In summary, the Project would result in a **cumulatively considerable contribution** to the identified significant cumulative impact to scenic quality of scenic vistas due to Project tree removal.

4.1.3 Air Quality

The geographic scope for considering cumulative impacts to air quality is the North Central Coast Air Basin, which is composed of Monterey, Santa Cruz, and San Benito counties and covers an area of more than 5,100 square miles. Air pollutants have impacts that are often, though not always, cumulative by nature. Any new source of pollution may contribute with foreseeable future projects to violations of criteria pollutant standards if the existing background sources cause non-attainment conditions, as they do according to the state standards for ozone and particulate matter in the Monterey Bay Air Resources District. Air districts manage attainment of the criteria pollutant standards by adopting rules, regulations, and attainment plans, which make up a multifaceted programmatic approach to such attainment.

IMPACT AIR-C CUMULATIVE DEVELOPMENT MAY RESULT IN SIGNIFICANT CUMULATIVE AIR QUALITY IMPACT. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

The Monterey Bay Air Resources District CEQA Air Quality Guidelines includes recommendations for the analysis of cumulative impacts pertaining to ozone and localized pollutants. Inconsistency with the Air Quality Management Plan (AQMP) is considered a cumulatively adverse air quality impact. Future development in the North Central Coast Air Basin would potentially exceed the AQMP growth assumptions and result in a significant cumulative impact. For example, several new mixed-use projects are proposed in the City of Santa Cruz and potential future rail service on the Santa Cruz Branch Line in the Project vicinity could emit criteria air pollutants from construction and operation.

As discussed in Impacts AIR-1 and AIR-2 in Section 3.2, *Air Quality*, the Proposed Project would be consistent with the AQMP, and in fact would help to implement the plan. Therefore, based on the Monterey Bay Air Resources District Guidelines, the Project's contribution to a cumulative air quality impact related to AQMP consistency would not be cumulatively considerable. In addition, as indicated in Impact AIR-3, the Project would not result in new vehicle trips and would not result in impacts related to CO hotspots. Because the Project would be consistent with the AQMP and would result in less than significant impacts pertaining to criteria pollutants, the Project's contribution to cumulative air quality impacts **would not be cumulatively considerable**.

4.1.4 Biological Resources

The cumulative setting for biological resources is the County of Santa Cruz from the North Coast, Big Basin State Park, and Castle Rock State Park in the north to the Watsonville City limits at the Pajaro River in the south. This cumulative extent is appropriate because it encompasses the planning area for the County and provides the City, the County, and the public with the opportunity to think broadly about regional land use planning and impacts on biological resources including: infill development; tree removal in the context of wildlife habitat, climate change, and the urban heat island effect; maintenance and establishment of parks, open spaces, and urban forest, with consideration of equitable distribution; retaining and enhancing opportunities for wildlife movement locally and across the region; and mitigation opportunities on a regional scale.

This extent includes the planned developments that would impact biological resources, both within the City of Santa Cruz and unincorporated County (Live Oak, as well as in the larger regional setting of open spaces and parks, creeks and drainages, natural communities, rangeland, coastal resources, and connectivity [links] between open spaces). This setting includes the length of the 32-mile, RTC-owned rail corridor.

The 2.2-mile-long Project corridor extends along the Santa Cruz Branch Rail Line, from the Beach Street/Pacific Avenue roundabout to 17th Avenue, and intercepts a range of land uses and habitat types. Project activities would be limited to the Project corridor and rail right-of-way, access routes, and staging areas.

IMPACT BIO-C CUMULATIVE DEVELOPMENT WOULD RESULT IN SIGNIFICANT CUMULATIVE BIOLOGICAL RESOURCES IMPACTS. THE PROJECT'S CONTRIBUTION WOULD BE CUMULATIVELY CONSIDERABLE.

Cumulative projects in the County of Santa Cruz (as identified in **Table 4-1**) that are most relevant to cumulative impacts to biological resources are projects along the rail corridor, including the Coastal Rail Trail Segments 5, 10 through 20 (which implement the Monterey Bay Sanctuary Scenic Trail [MBSST] Network Master Plan), rail service, rail maintenance, as well as various urban infill redevelopment residential and commercial projects. Presumably, the permanent losses of sensitive

biological resources associated with the projects listed in **Table 4-1** would be mitigated within each project's planning and approval process, as with the Proposed Project.

Habitat Modification. Projects that improve public access, as well as development and redevelopment projects, could modify the habitats along the Santa Cruz Branch Rail Line corridor and throughout Santa Cruz County in general, as a result of disturbance from construction activities and the subsequent introduction of and/or substantial increase in public use, which could result in the following.

- Trampling and degradation of sensitive habitats.
- Disruption of habitat values associated with edge habitat.
- Degradation of wetlands, creeks, drainages, riparian habitat, water quality, associated habitat values and functions, and ecosystems services, including channelization of storm runoff that may increase stream flow, erosion, and sedimentation.
- Disruption of wildlife utilization of biological resources for foraging; hydration; cover, shelter, aestivation/hybernacula[1]; nesting and breeding; movement, dispersal, and migration. Affected wildlife could include monarch butterfly, sensitive fish species, amphibians and reptiles, sensitive and native nesting birds, roosting bats, and San Francisco dusky-footed woodrat.
- Increased fragmentation of open spaces.
- Introduction or increases in litter (including human foods), urine and fecal matter, off-leash dogs (causing harassment and mortality of wildlife).
- Removal of trees, including City Heritage, County Significant, native trees, and their understory vegetation; conversion of urban forest into hardscape developments; loss of microclimate and climate mitigation effects from trees/urban forests (carbon sequestration); and loss of the ecological functions and values associated with mature woodlands and forest.

Although most of the Santa Cruz Branch Rail Line is currently inactive, the RTC performs maintenance annually along the rail corridor to preserve the rail line infrastructure, provide access for maintenance vehicles and services, and protect public safety. The RTC also performs maintenance to repair rail infrastructure for rail operations as needed and based on funding availability. Annual maintenance may include: tree trimming, limbing, or removal; vegetation management through mastication (i.e., reducing to small pieces), mowing, and herbicide application; and culvert cleanout and drainage ditch improvements through clearing and grading. Maintenance of the rail line by the RTC falls under the provisions of the 1995 Interstate Commerce Commission Termination Act,[2] which subjects these activities to federal law; however, state and local laws and regulations are preempted. Therefore, removal and maintenance of larger trees and those within sensitive habitats (e.g., oak woodland, monarch roost sites) would not necessarily be protected by the City Heritage Tree and County Significant Tree ordinances. Therefore, the undetermined amount of trees that could be removed as part of future RTC maintenance activities, combined with tree removal that could be required for other planned projects listed in **Table 4-1**, would be cumulatively significant.

[1] Aestivation is a state of animal dormancy, similar to hibernation, although taking place in the summer rather than the winter. Hibernacula is a place where an animal seeks refuge.

[2] The act preempts the state and local regulation of matters directly regulated by the Surface Transportation Board, such as the construction, operation, and abandonment of rail lines.[2] State and local regulations could be used to deny a railroad the ability to perform part of its operations or proceed with activities authorized by the Surface Transportation Board. The requirement to obtain state and local permits would interfere with the RTC's right to conduct operations, would prevent or delay the repair work, and would conflict with the RTC's obligations to make repairs necessary for freight as required by RTC's Agreement with their contracted rail carrier.

Taken cumulatively, impacts resulting from tree and vegetation removal would result in degradation and fragmentation of wildlife movement corridors, the suite of habitat types, and associated biological resources that occur within the cumulative setting, and result in overall diminished regional ecological functions and values. This would be a significant cumulative impact to biological resources in the region.

As described in Section 3.3, *Biological Resources,* the mature coast live oak and non-native trees along the rail corridor intersect the otherwise fragmented aquatic features, parks, and open spaces along the corridor, and the associated sensitive biological resources. The Proposed Project would contribute to cumulative impacts by removing trees (381 trees) and disrupting/displacing sensitive habitats (including Environmentally Sensitive Habitat Areas, as defined by the California Coastal Commission) and wildlife movement corridors. Mitigation for biological impacts identified in this EIR include the preparation of a Project-specific Biological Resources Mitigation and Management Plan (MMP) that includes tree replacement and the development of alternate corridors for wildlife movement. However, there is a lack of available undeveloped land in locations that would allow for a reduction in habitat fragmentation or replacement of wildlife movement corridors. Additionally, it would take several decades for replacement trees to establish, mature, and create habitat with multi-tiered canopy, understory vegetation, established duff/soil/micro-organism environment and nutrient cycling, and the associated ecological attributes. Therefore, the Project-impact would still be significant.

Cumulative impacts associated with the optional Interim Trail would be similar to but greater than those of the Proposed Project, because there would be more tree removal (404 trees) and two additional construction periods, when considering all three parts of implementing the optional Interim Trail; and this would subject the habitats along the Project corridor to construction-related disturbances during each stage. Part 1 (rail removal and Interim Trail construction) would remove 124 trees; Part 2 (Interim Trail removal and rail construction) would remove 0 trees; and Part 3 (Ultimate Trail Configuration construction) would remove 280 trees. In summary, the Project's contribution to the loss of trees and fragmentation of habitat and wildlife corridors **would be cumulatively considerable**.

To help mitigate for the Project's contribution to significant cumulative impacts, Mitigation Measure BIO-C has been identified to require the Project-specific MMP (Mitigation Measure BIO-9b) to also include cumulative conservation goals.

Mitigation Measure BIO-C: Include Cumulative Conservation Goals and Objectives in the Project-Specific Biological Resources Mitigation and Management Plan (Mitigation Measure BIO-9b)

When developing the Project-specific Biological Resources Mitigation and Management Plan (MMP) required for Mitigation Measure BIO-9(b), the City and/or County shall include specific goals, objectives, and qualitative performance criteria to maintain functional connectivity between habitat patches and open spaces, including the functions and values of the existing linear feature composed of non-native forest, sensitive habitats, and aquatic features, for movement, dispersal, migration, and genetic exchange of native plants and animals through conservation of the following.

- Sensitive habitats and edge habitats
- Ecosystems services and water quality associated with wetlands, creeks, drainages, riparian habitat
- Wildlife movement habitat, including resources for foraging; hydration; cover, shelter, aestivation/hybernacula; nesting and breeding; and movement, dispersal, migration.

The MMP shall include adaptive management strategies and shall include an evaluation of (and adaptive management as needed for) the effects of illegal camping, litter (including human foods), urine and fecal matter, and illegal off-leash dogs on biological resources.

4.1.5 Cultural Resources

The geographic scope for considering cumulative impacts to cultural resources is based on the historic, ethnographic, and prehistoric period use patterns of the Project area and surrounding region. The geographic extent of cumulative impacts for the historic period is the County of Santa Cruz. For the ethnographic period, the geographic extent includes the entire traditional Ohlone territory. The geographic context for the prehistoric period includes the City of Santa Cruz and Santa Cruz County and nearby portions of adjacent counties.

IMPACT CR-C CUMULATIVE DEVELOPMENT MAY RESULT IN SIGNIFICANT CUMULATIVE CULTURAL RESOURCE IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE, EXCEPT FOR CUMULATIVE IMPACTS TO THE HISTORIC SANTA CRUZ BRANCH RAIL LINE THAT RESULT FROM RAIL REMOVAL (OPTIONAL INTERIM TRAIL ONLY).

The Project, in conjunction with other nearby past, present, and reasonably foreseeable probable future projects in the region as shown in **Table 4-1**, could adversely impact cultural resources.

Existing and Unidentified Resources. Cumulative development in the region, including projects listed in **Table 4-1**, would involve ground-disturbing activities during construction that could encounter and impact known or unknown historical resources, archaeological resources, and human remains given the cultural sensitivity of the Santa Cruz region. However, projects would be required to comply with the Chapter 24.12 of the City's Municipal Code and Chapter 16.40 of the County's Municipal Code, which would require stop work, evaluation, and preservation of resources. Projects would also be subject to California Public Resources Code, Section 5097.98, and California Health and Safety Code, Section 7050.5, with respect to the discovery and handling of human remains. Therefore, the cumulative impact would be less than significant. Although there are no known resources in the Project vicinity, there is still the potential to unearth resources and human remains during Project construction. The Project would similarly adhere to Chapter 24.12 of the City's Municipal Code, Chapter 16.40 of the County's Municipal Code, California Public Resources Code, Section 5097.98, and California Health and Safety Code, Section 7050.5. Additionally, the Project would be required to implement Mitigation Measure CR-2 which reinforces the protocol for unanticipated discovery of cultural resources. Therefore, impacts from the Project **would not be cumulatively considerable**.

Historical Rail Resources. Cumulative development of the Coastal Rail Trail Segments 10–20 could result in a significant cumulative impact to historical resources if an optional Interim Trail is developed requiring demolition of the rail line. As discussed in Section 3.4, *Cultural Resources,* the Santa Cruz Branch Rail Line within the RTC-owned rail corridor is eligible for federal, state, and local designation as a historical resource. Therefore, impacts to historical rail resources from removal of the Santa Cruz Branch Rail Line for development of the Coastal Rail Trail could be cumulatively considerable.

The *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* would not remove a portion of the Santa Cruz Branch Rail Line, but it would introduce a partial material impairment to the rail line from the installation of fencing and guardrails and relocation of track in some locations. However, this potential impact would be reduced to a less than significant level with implementation of Mitigation Measure CR-1a, which requires interpretive displays documenting the history of the Santa Cruz Branch Railroad. Because the *Proposed Project: Trail next to Rail line*

(Ultimate Trail Configuration) would not remove a historical resource, the contribution to the cumulative impact **would not be cumulatively considerable**.

The *Optional First Phase: Trail on the Rail line (Interim Trail)* would remove a portion of the Santa Cruz Branch Rail Line. Although the optional Interim Trail would implement Mitigation Measure CR-1a, as well as Mitigation Measures CR-1b, to record the historic rail line, it would nonetheless result in removal of the historic rail line. Therefore, impacts to historical resources from the optional Interim Trail cannot be mitigated, and the Project's contribution to cumulative impacts **would be cumulatively considerable**.

In summary, the Project with the optional Interim Trail would result in a **cumulatively considerable contribution** to the identified potentially significant cumulative impact to historic rail resources due to rail line removal. However, the impact of the Project without the optional Interim Trail would not be cumulatively considerable.

4.1.6 Energy

The geographic scope for considering cumulative impacts related to electricity and natural gas use are the Central Coast Community Energy and Pacific Gas & Electric service area. This scope is appropriate because cumulative projects in the service areas of the Project area energy providers would impact the ability of these providers to meet renewable portfolio standards. The geographic scope for fuel use are the jurisdictions in the Association of Monterey Bay Area Governments because regional planning to reduce vehicle miles traveled (VMT) and associated fuel use is guided by the Association of Monterey Bay Area Governments Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS).

IMPACT ENE-C CUMULATIVE DEVELOPMENT WOULD POTENTIALLY RESULT IN A SIGNIFICANT CUMULATIVE ENERGY USE IMPACT RELATED TO INEFFICIENT ENERGY USE. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

New development projects, including those listed in **Table 4-1**, would have the potential to result in regional energy demand, including electricity, natural gas, and fuel use. New structures would be required to comply with increasingly stringent Title 24 building energy use standards. Additionally, many of the cumulative projects, such as new mixed-use development in the City, are consistent with regional and state goals to prioritize compact infill development to reduce fuel use and VMT. The cumulative projects in **Table 4-1** also include other rail trail segments and roadway improvements to increase alternative transportation connections. Therefore, cumulative development would not be expected to result in wasteful, unnecessary, or inefficient energy use; or energy use that would conflict with the MTP/SCS or utility provider plans to meet future energy consumption. The Project would provide a new alternative transportation facility and would support MTP/SCS goals to reduce regional fuel use. Similar to the Project, construction of cumulative projects would result in one-time energy use necessary for project implementation. Therefore, energy impacts from the cumulative projects in **Table 4-1** would not result in a cumulative impact. Thus, the Project's contribution would **not be cumulatively considerable**.

4.1.7 Geology and Soils

The geographic scope for considering cumulative impacts to geology and soils is the Project corridor and the immediately adjacent areas. This scope is appropriate because geologic materials and soils occur at specific locales and are generally affected by activities directly on or immediately adjacent

to the soils, and not by activities occurring outside the area. In addition, any geologic impacts of the Project would be site-specific.

IMPACT GEO-C CUMULATIVE DEVELOPMENT WOULD NOT RESULT IN SIGNIFICANT CUMULATIVE GEOLOGY AND SOILS IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Geology and Soils. The geographic context for the analysis of impacts regarding seismic and other geological hazards is generally site-specific, rather than cumulative in nature because each development site has unique geologic considerations that would be subject to uniform site development and construction standards. Because of the site-specific nature of potential seismic and soil issues, any future development along the corridor would be required to address these issues on a case-by-case basis through preparation of required soils and geotechnical engineering studies and adherence to the recommendations therein. They would also be required to adhere to existing local and state laws and regulations including the applicable standards and requirements, such as American Association of State Highway and Transportation Officials and Caltrans. Thus, the cumulative geology and soils impact of planned development would not be significant. Furthermore, with adherence to the applicable laws and regulations and required mitigation, the Project's contribution to any cumulative geology and soils impacts **would not be cumulatively considerable**.

Paleontological Resources. Construction of the Project and other projects in the City or County of Santa Cruz could cumulatively contribute to the disruption or loss of significant paleontological resources because the region is sensitive to such resources. Therefore, the cumulative impacts to paleontological resources could be significant. As described in Section 3.5, *Geology and Soils,* Segment 9 of the Project is underlain by geologic units with high paleontological sensitivity. Therefore, ground-disturbing activities associated with Project construction may directly or indirectly destroy a unique paleontological resource or geologic feature in the Project corridor. Implementation of Mitigation Measure GEO-5 would reduce potential impacts to any paleontological resources present within the Project corridor because they would be identified, preserved, and curated at a location where they would be accessible for future research. Because impacts to paleontological resources would be less than significant with Mitigation Measure GEO-5, the Project's contribution to this cumulative effect **would not be cumulatively considerable**.

In summary, there could be significant cumulative impacts to paleontological resources from planned development and projects, but the Project's contribution **would not be cumulatively considerable**.

4.1.8 Greenhouse Gas Emissions/Climate Change

Greenhouse gases (GHG) and climate change are, by definition, cumulative impacts. The geographic scope for considering cumulative impacts related to GHG emissions is the State of California. Although GHG emissions have worldwide repercussions, the contribution of the Project to the impact is addressed in light of the goals for reducing statewide emissions.

IMPACT GHG-C CUMULATIVE STATEWIDE DEVELOPMENT WOULD RESULT IN A SIGNIFICANT CUMULATIVE GHG IMPACT. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Statewide GHG emissions are an existing significant cumulative impact. As such, the state has established the following statewide emissions reductions targets:

- By 2020, reduce GHG emissions to 1990 levels
- By 2030, reduce GHG emissions to 40% below 1990 levels

- By 2045, achieve carbon neutrality no later than 2045
- By 2050, reduce GHG emissions to 80% below 1990 levels

Each of the planned projects, including those listed in **Table 4-1** such as new mixed-use development in the City, would result in one-time GHG emissions during construction that would be a relatively small contribution to total GHG emissions. However, following construction, some of the projects would have operational emissions (e.g., vehicular traffic from mixed-use developments, potential future rail service in the rail corridor) and result in an ongoing increase in statewide GHG emissions if diesel or other fuel would be consumed, contributing to an existing cumulative impact.

Once constructed and in use, the Project would provide a new alternative transportation facility and would not contribute to this increase in GHG emissions from cumulative projects. The Project would implement a segment of the MBSST Network, which is consistent with the goals of the City and County climate action plans and the California Air Resources Board Scoping Plan to increase pedestrian and bicycle facilities and reduce VMT. Therefore, the Project would be in compliance with statewide and local emissions reduction strategies and targets, the Project's contribution to cumulative GHG emissions impacts **would not be cumulatively considerable**.

4.1.9 Hazards and Hazardous Materials

Cumulative impacts associated with hazards and hazardous materials are generally site-specific. As such, the geographic scope for considering cumulative impacts to most hazards is the Project corridor, the immediately adjacent areas, and primary roadways used to transport hazardous materials.

Impact HAZ-C CUMULATIVE DEVELOPMENT WOULD NOT RESULT IN SIGNIFICANT CUMULATIVE HAZARDS AND HAZARDOUS MATERIALS IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

As show in **Table 4-1,** numerous development projects are anticipated in the Santa Cruz region. The projects that are listed in **Table 4-1** include residential, commercial, and other development, the construction and/or operation of which could expose residents and structures to hazardous materials impacts.

Cumulative projects located along State Route (SR-) 1 or the rail corridor could cumulatively increase the potential for exposure of people to hazards from material transport. For any project in **Table 4-1** that requires movement and disposal of hazardous materials, that movement would likely occur along SR-1. Although the transport of hazardous materials or waste could occur along SR-1, USEPA and U.S. Department of Transportation laws and regulations have been promulgated to track and manage the safe interstate transportation of hazardous materials and waste so there would be no cumulative impact. Similarly, under authority delegated by the Secretary of Transportation, the Federal Railroad Administration administers a safety program that oversees the movement of hazardous materials throughout the United States rail transportation system. Regulations pertaining to the transport of hazardous materials on railroads include specialized training, container sealing and movement, labeling, and emergency response. Enforcement of these laws and regulations and rapid response by local agencies would reduce hazards to the public or environment from reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Compliance with these existing regulations would generally limit the potential for hazardous materials exposure along the SR-1 corridor, the rail corridor, and beyond, such that cumulative impact of the planned projects would not be significant. The Project itself would not significantly increase the quantity of hazardous materials being transported throughout the Santa Cruz region, and therefore would not contribute to a cumulative effect. As impacts of the Project would be site-specific, minimal in volume, and less than

significant, they would not contribute to a significant cumulative effect. Therefore, the Project's contribution to this impact would **not be cumulatively considerable**.

Hazardous materials releases are generally specific to each project and the geographic context for hazardous materials impacts focuses on the Project corridor and immediately adjacent lands. Two projects in the City of Santa Cruz are adjacent to the Project corridor, including the Murray Street Bridge Seismic Retrofit/Barrier Rail Project. However, the Project is not on or near known hazardous sites (WHA 2022). Because of the site-specific nature of potential hazardous materials-related issues, any future development along the corridor would be required to address these issues on a case-by-case basis through project-specific permitting. Therefore, cumulative impacts associated with nearby projects would not be significant. As discussed under Impact HAZ-2, the Project could expose construction personnel, public, and students at Shoreline Middle School to hazardous materials due to exposure to existing soil contaminants released during Project construction. However, implementation of Mitigation Measures HAZ-2a and HAZ-2b, as well as Mitigation Measure HAZ-2c for the optional Interim Trail, would reduce project-specific impacts to a less than significant level by requiring soil sampling, remediation, and management, as well as a Phase I ESA. With implementation of Mitigation Measures HAZ-2a through HAZ-2c, exposure to potential hazardous materials would be reduced so that the Project's contribution to a cumulative impact from exposure to soil contaminants **would not be cumulatively considerable**.

In summary, planned development could result in significant cumulative impacts concerning transport of hazardous materials, release of hazardous materials, and exposure to soil contaminants. However, the Project's contribution to hazards and hazardous materials impacts **would not be cumulatively considerable.**

4.1.10 Hydrology and Water Quality

The San Lorenzo Hydrologic Sub-Area is the cumulative setting for surface water resources. The San Lorenzo watershed is a 138 square mile area located along the Central Coast of California and drains from the Castle Rock area of Summit to the north, Ben Lomond Mountain on the west and the Branciforte area on the eastside down to the Pacific Ocean at the north end of Monterey Bay by the Santa Cruz Beach Boardwalk. Notable tributaries of the San Lorenzo River include Kings, Boulder, Bear, Bean, Fall, Newell, Zayante and Branciforte Creeks.

The cumulative setting for groundwater resources is limited to the boundaries of The West Santa Cruz Terrace Groundwater Basin and the Santa Cruz Mid-County Groundwater Basin underlies the only two basins that underlie the Project corridor. The West Santa Cruz Terrace Groundwater Basin underlies approximately 1 mile of the western portion of the Project corridor. Santa Cruz Mid-County Groundwater Basin underlies approximately 1.2 miles of the eastern portion of the Project corridor.

IMPACT HYD-C CUMULATIVE DEVELOPMENT WOULD NOT RESULT IN SIGNIFICANT CUMULATIVE HYDROLOGY AND WATER QUALITY IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Cumulative projects shown in **Table 4.1** could result in a substantial amount of new impermeable surfaces which could increase runoff of stormwater pollutants, reduce groundwater recharge, and increase stormwater flows which would contribute to a cumulative increase in impacts on water quality. All the projects would be subject to federal, state, and local regulations including the National Pollutant Discharge Elimination System permit that are designed to reduce stormwater runoff from project sites by promoting infiltration, minimizing impervious, and requiring a no-net increase in flows over the existing condition through hydromodification processes to improve water quality. With the cumulative projects' compliance with applicable laws and regulations and their

incorporation of required construction and operational best management practices, no significant cumulative impacts are anticipated. The Project would be subject to the same applicable laws, and accordingly the Project's contribution **would not be cumulatively considerable**.

The geographic context for the analysis of cumulative impacts for exposure inundation by flood, seiche, tsunami, or mudflow is site-specific and not cumulative in nature. The exposure of one project to inundation is based on the upstream location of a seiche or mudflow or location on the coast for a tsunami and would not affect the location of another cumulative project. Future development projects that would be constructed in an inundation area would be required to incorporate applicable building standards related to flood hazards and tsunamis to minimize the impacts from these types of events. Therefore, no significant cumulative impacts are anticipated, and the Project's contribution **would not be cumulatively considerable.**

In summary, planned development would not result in significant cumulative impacts concerning violation of water quality standards or waste discharge requirements, decreased groundwater supplies or interference with groundwater recharge, alterations to existing drainage patterns, or conflicts with water quality or groundwater plans. The Project's contribution to hydrology and water quality impacts **would not be cumulatively considerable.**

4.1.11 Land Use and Planning

The cumulative setting for land use and planning includes the area in the vicinity of the Project corridor, as it extends through the County. **Figures 3.9-1a** through **3.9-4b** in Section 3.9, *Land Use and Planning,* show that the land use designations and zoning districts in this area include residential, commercial, industrial, and public facilities uses. Land uses are predominantly commercial and residential, with the Project corridor entirely within a Public Facilities land use designation.

IMPACT LUP-C CUMULATIVE DEVELOPMENT WOULD NOT RESULT IN SIGNIFICANT CUMULATIVE LAND USE IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

As shown in **Table 4-1**, past, present, and reasonably foreseeable projects in the City and County are primarily infrastructure improvements and residential or mixed-use projects. Other future development that could occur in the Project vicinity, based on the City and County General Plan land use designations and zoning districts, includes residential redevelopment and/or commercial redevelopment. Because the majority of land near the Project corridor is already developed, future development would be limited to redevelopment or infill projects.

Planned development projects would be required to comply with policies established by the City of Santa Cruz General Plan, City's Municipal Code, Santa Cruz County General Plan, County's Municipal Code, and other adopted planning documents that limit the bounds and extent of development, as described in Section 3.9. Projects would also need to support the common goal of enhancing existing communities, providing additional recreational opportunities, and protecting and preserving natural resources. Planned uses and development would result in additional visitors and employees to the areas surrounding the Project corridor but would not introduce new land uses that would conflict with existing rural and agricultural land uses, substantially change land use patterns, physically divide established communities, or conflict with relevant plans and policies. Therefore, cumulative development would not result in significant cumulative land use impacts.

The Project would introduce a multi-use trail along the existing rail corridor improving connectivity and accessibility within the City of Santa Cruz and surrounding unincorporated area for existing and planned land uses, and providing an alternative transportation corridor and recreational land use

where rail lines are underutilized. As described in Section 3.9, the addition of the trail would not physically divide an established community or conflict with applicable plans and policies, and the impact would be less than significant. Although overall use of the lands surrounding the Project corridor would increase, the land use impact of the Project would be less than significant, would not result in a substantial contribution to an existing cumulative land use impact, and thus **would not be cumulatively considerable**.

4.1.12 Noise

The geographic extent for the analysis of cumulative construction noise, stationary noise, and vibration impacts is generally limited to areas within 0.5 mile of the Project corridor. Beyond this distance, impulse noise may be briefly audible, and steady noise from construction activity or Project operations would generally dissipate such that the level of noise would reduce to below applicable noise standards and/or blend in with the background noise level. Similarly, vibration is a localized phenomenon that reduces progressively as the distance from the source increases. As such, this geographic extent is appropriate for construction noise and vibration, as well as stationary noise. The geographic scope for ambient vehicle noise levels are the roadways serving the Project corridor and cumulative projects.

IMPACT N-C CUMULATIVE DEVELOPMENT MAY RESULT IN SIGNIFICANT CUMULATIVE NOISE IMPACTS TO AMBIENT VEHICLE NOISE. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Construction noise and ground-borne vibration from planned development, including projects listed in **Table 4-1**, would be limited to the construction phase in the immediate vicinity (150–550 feet for noise and 50 feet for vibration) from the operation of construction equipment. Construction noise and vibration would cease after construction is completed. Due to the linear nature of project construction, construction of the cumulative projects is unlikely to occur simultaneously in close enough proximity to Project construction to result in cumulative construction noise or vibration exposure. The potential for future rail service identified in **Table 4-1** would have the potential to generate ongoing noise and vibration in the immediate vicinity of the Project corridor. However, based on the planned construction time frame for the Project, with or without the optional Interim Trail, Project construction would cease prior to potential future rail operation. As such, vibration impacts would not combine with other cumulative development to generate cumulative noise or vibration impacts, including potential vibration generated by future rail operation. Therefore, planned development would not result in a significant cumulative impact during construction. Thus, the Project's contribution to a cumulative construction noise and vibration impact **would not be cumulatively considerable**.

The cumulative projects, such as new mixed-use development in the City and County, would introduce new stationary noise sources, such as heating, ventilation, and air conditioning equipment, that could potentially generate new stationary noise near sensitive receptors (e.g., residences, libraries, schools). However, new development would be required to demonstrate consistency with local standards, including the City and County Noise Ordinances. Therefore, planned development would not result in a significant cumulative impact. As discussed in Section 3.10, *Noise*, the Project would not generate significant on-site operational noise levels, and operation of the trail would result in minimal and incremental noise from human conversations. As such, the project contribution to stationary noise impacts **would not be cumulatively considerable**.

A cumulative ambient vehicle noise impact would occur if cumulative development would result in an increase in ambient noise of 3 dBA on area roadways compared to existing conditions. New land

use development, such as new mixed-use projects, would likely result in an increase in vehicle trips that could increase traffic noise and ambient noise levels, which could be a significant cumulative impact. However, the Project would not result in new vehicle trips or other ambient noise sources. Thus, the Project's contribution to ambient noise impacts **would not be cumulatively considerable**.

In summary, the Project, in combination with cumulative development, would not result in a significant cumulative impact related to construction noise and vibration, or stationary noise sources. Cumulative development would have the potential to result in cumulatively considerable increases in ambient vehicle noise; however, the Project's contribution **would not be cumulatively considerable**.

4.1.13 Public Safety and Services

The cumulative setting for public safety and services includes the service areas for fire, emergency response, police, schools, parks and recreational facilities, and other general public services, including libraries. Many of these service areas are City- or County-wide. Emergency service providers, park facilities, and health service facilities that serve Santa Cruz County are described in Section 3.11*, Public Safety and Services*.

IMPACT PUB-C CUMULATIVE DEVELOPMENT COULD RESULT IN SIGNIFICANT CUMULATIVE IMPACTS TO PUBLIC SAFETY AND SERVICES. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

Planned projects, including those listed in **Table 4-1**, include residential, commercial, and other development that would require public services, including emergency response, police and fire protection, parks and recreation, schools, libraries, and healthcare facilities. The extent of development would likely require the need for additional services, including staff resources and possibly the construction of new facilities (e.g., fire or police stations, parks, schools), which could result in a potentially significant physical impact on the environment (e.g., increased air emissions, traffic, noise). Therefore, cumulative impacts would be potentially significant.

The planned projects in **Table 4-1** include the Coastal Rail Trail Segments 10 through 18. Although it is anticipated the trail would be used primarily by County residents as a form of alternative transportation and recreation, the cumulative effect of constructing more segments could attract more visitors to the Santa Cruz region.

This may result in safety concerns throughout the Project corridor, as a result of the increased use of trails by the general public, the potential for unhoused populations to use the trail corridors for illegal camping, and the addition of trash and/or debris. However, the cumulative effect of implementing the Coastal Rail Trail would be similar in nature to that described for the Project in Section 3.11. Buildout of the Coastal Rail Trail would not introduce a permanent population to the Santa Cruz region. Increased use of the rail corridor by trail users is not expected to affect response times or generate a need for additional public services personnel that warrants expansion of existing facilities or construction of new facilities. Increased visibility through vegetation removal and trail installment could reduce loitering or inappropriate activities along the rail corridor, and the trail width would be sufficient for emergency access. Therefore, when considering buildout of the Coastal Rail Trail without the other planned development in **Table 4-1**, it is not anticipated to result in a significant cumulative impact.

As the cities and unincorporated areas in the vicinity of the Project grow through development, the County Sheriff's office monitors and adjusts the services provided to the citizens and visitors of Santa Cruz to meet the fluctuating needs of the public, including the increased use of recreational facilities, such as the Project. Similarly, the police protection services provided by the local

jurisdictions along the Project corridor are anticipated to fluctuate to meet service needs as they arise without the need for additional police stations or other facilities that would cause impacts. Therefore, the Project's contribution to emergency service response times **would not be cumulatively considerable**.

4.1.14 Recreation

Planned projects, including those listed in **Table 4-1**, include residential, commercial, and other development that would require additional recreational facilities. The extent of development would likely require the need for the expansion of recreational facilities, which could result in a potentially significant physical impact on the environment (e.g., increased air emissions, traffic, noise). Therefore, cumulative impacts would be potentially significant.

The planned projects in **Table 4-1** include the Coastal Rail Trail Segments 10 through 18. It is anticipated the trail would be used primarily by County and City residents as a form of alternative transportation and recreation, the cumulative effect of constructing more segments could provide increased access to recreational facilities such that it could accelerate deterioration of these facilities. Implementation of the Coastal Rail Trail Segments 10 through 18 would result in increased trail use throughout the Project corridor. However, the cumulative effect of implementing the Coastal Rail Trail would be similar in nature to that described for the Project in Section 3.15.10, *Recreation*. Buildout of the Coastal Rail Trail would not introduce a permanent population to the Santa Cruz region. Therefore, there would not be a permanent additional demand on existing facilities due to a population increase nor the need to expand recreational facilities. Increased use of the rail corridor by trail users is not expected to accelerate physical deterioration of recreational facilities. Therefore, when considering buildout of the Coastal Rail Trail without the other planned development in **Table 4-1**, it is not anticipated to result in a significant cumulative impact.

In summary, planned development would not result in significant cumulative impacts concerning substantial deterioration of existing recreational facilities and expansion of recreational facilities. Therefore, the Project's contribution to recreation **would not be cumulatively considerable**.

4.1.15 Transportation

The cumulative setting for transportation includes the greater Santa Cruz County region. This is an appropriate cumulative impact area for transportation because it is anticipated that most trips to the Project corridor would originate from within Santa Cruz County.

IMPACT T-C CUMULATIVE DEVELOPMENT WOULD RESULT IN SIGNIFICANT CUMULATIVE TRAFFIC IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

As detailed in **Table 4-1**, the past, present, and reasonably foreseeable projects in the City and County are primarily related to infrastructure improvements and residential or mixed-use projects. Cumulative development in the Santa Cruz County region would be required to comply with policies established by relevant planning documents, such as the Santa Cruz County Regional Transportation Plan, the Santa Cruz County General Plan, the City of Santa Cruz General Plan, and the City's and County's Municipal Codes. Therefore, cumulative impacts related to conflicts with programs, plans, and ordinances or policies addressing the circulation system would be less than significant. As described above and in Section 3.9, the Project would not conflict with applicable land use plans, policies, or regulations. In addition, the Project is consistent with the overall buildout projections of the Santa Cruz County General Plan and City of Santa Cruz General Plan, including the growth that is envisioned in the County through 2030 and the associated population that would be facilitated by

such growth. Furthermore, the Project is identified in the RTC's 2045 Regional Transportation Plan Project List and was therefore included in the cumulative VMT analysis through 2045 (RTC 2022). The Project is also identified in the Santa Cruz County Active Transportation Program, the MBSST Master Plan, and the City of Santa Cruz Active Transportation Plan (Santa Cruz County 2022; RTC 2013; City of Santa Cruz 2017). As the Project would comply with the plans and policies described above, the Project's contribution to cumulative impacts related to consistency with programs, plans, and ordinances **would not be cumulatively considerable**.

Buildout of the cumulative projects listed in **Table 4-1** would result in growth that would contribute to VMT in the Santa Cruz County region. This increase in VMT could result in a potentially significant cumulative impact. However, the Project would provide a bicycle and pedestrian system that is inaccessible to unauthorized vehicular traffic and would provide an alternative means of travel to key destinations throughout the region. For example, the Project would connect the beach, the Santa Cruz Wharf and Boardwalk, places of employment, residences, shopping and dining opportunities, and recreational parks, making it an ideal option for commuting in and around the Project area. Furthermore, the Project would not result in additional parking locations or bathroom facilities that would generate additional trips to the Project corridor. Therefore, the Project would not cumulatively contribute to regional VMT. Rather, because the Project would provide a pedestrian and bicycle connection through some of the growth projected in the region, it would potentially decrease future VMT in Santa Cruz County. Therefore, the Project's contribution to this potentially significant cumulative impact **would not be cumulatively considerable.**

Buildout of the cumulative projects listed in **Table 4-1** could also result in hazards during construction. Depending on the timing, location, and duration of construction activities associated with cumulative projects, the potential for lane closures and heavy equipment operating on local roadways could result in a potentially significant cumulative impact. Additionally, buildout of projects listed in **Table 4-1** could result in cumulative impacts to emergency access by increasing barriers to access and the number of vehicles on local roadways during an emergency. However, construction traffic control plans that include public notification, signage, flaggers, and traffic signal modifications would maintain public safety during construction of the Proposed Project while the implementation of safety design features would maintain public safety and emergency access during Project operation. Therefore, the Project's contribution to this potentially significant cumulative impact would **not be cumulatively considerable** during either construction or operation. In addition, Central Fire District of Santa Cruz County indicated that the Project alignment would allow sufficient emergency access for responders and first response equipment (Mack 2022). Thus, the Project's contribution to cumulative impacts associated with emergency access **would not be cumulatively considerable**.

In summary, planned development would result in significant cumulative impacts associated with increased VMT, traffic, and potential hazards during construction, and emergency access. The Project's contribution **would not be cumulatively considerable**.

4.1.16 Tribal Cultural Resources

The geographic scope for considering cumulative impacts to tribal cultural resources is based on the historic, ethnographic, and prehistoric period use patterns of the Project area and surrounding region. Therefore, the cumulative setting for transportation includes the greater Santa Cruz County region.

IMPACT TCR-C CUMULATIVE DEVELOPMENT MAY RESULT IN SIGNIFICANT CUMULATIVE TRIBAL CULTURAL RESOURCE IMPACTS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

The Project, in conjunction with other nearby past, present, and reasonably foreseeable probable future projects in the region as shown in **Table 4-1**, could adversely impact tribal cultural resources. Cumulative development within the vicinity of the Project would continue to disturb areas with the potential to contain tribal cultural resources due to the high sensitivity of the Santa Cruz region to contain Native American habitation sites. Compliance with AB 52 and continued involvement by local Native Americans in regional planning would generally minimize the destruction of tribal cultural resources throughout the Santa Cruz region. In addition, it is anticipated that potential impacts to identified or previously unidentified tribal cultural resources would be mitigated to less than significant on a project-by-project basis. Therefore, cumulative impacts to tribal cultural resources would not **be significant**.

As described in Section 3.13, *Tribal Cultural Resources*, under Impact TCR-1, no tribal cultural resources have been identified within the Project corridor. Potential impacts to previously unidentified tribal cultural resources would be reduced to a less than significant level with implementation of Mitigation Measures TCR-1a and TCR-1b, which requires Native American construction monitoring, avoidance if feasible, and preservation of any resources discovered during construction. As implementation of this measure would minimize adverse effects on any potential tribal cultural resources, the Project's contribution to this impact **would not be cumulatively considerable**.

4.1.17 Utilities and Service Systems

The geographic extent for the analysis of cumulative impacts to Utilities and Service Systems is as follows:

- Water: service area for the City of Santa Cruz Water Department (SCWD), as the SCWD would be the sole provider of water along the Project corridor.
- Wastewater: service area for the SCWD in addition to the service area for the Santa Cruz County Sanitation District (SCCSD), as the City of Santa Cruz Wastewater Treatment Facility (WWTF), would receive any wastewater generated during construction of the Project. The City of Santa Cruz WWTF provides wastewater treatment and ocean outfall disposal services to both the City of Santa Cruz and the SCCSD service areas.
- Stormwater drainage: areas of the City of Santa Cruz and the County of Santa Cruz adjacent to the Project corridor, as stormwater within the vicinity of the Project corridor would drain to either into the existing nearby drainage system or into the natural material swale proposed along Segment 9.
- Solid waste: service areas for City and County solid waste collection and disposal, including the City's Resource Recovery Facility (RRF) Landfill and County's Buena Vista Landfill.

Impact UTIL-C CUMULATIVE DEVELOPMENT MAY RESULT IN SIGNIFICANT CUMULATIVE IMPACTS TO UTILITIES AND SERVICE SYSTEMS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

As detailed in **Table 4-1,** the past, present, and reasonably foreseeable projects in the City and County are primarily related to infrastructure improvements and residential or mixed-use projects. Other allowable development in the Project vicinity could include residential redevelopment and/or commercial redevelopment. Buildout of cumulative projects would increase demands on utility infrastructure.

Water. SCWD anticipates that water supplies under the average/normal year and single dry water year hydrological conditions will be sufficient to meet demand through 2045 (City of Santa Cruz 2021).

In an extreme multiple dry water year hydrological condition, the SCWD anticipates that water supplies would meet projected water demand during all years, except for small projected shortages during the fifth year of the extended drought in the 2040 – 2045 time frame. During this period in the fifth year of the extended drought, the SCWD anticipates that water supplies would meet 98% of demand (City of Santa Cruz 2021). Because the projected water demand detailed in the Urban Water Management Plan is based upon population projections developed through coordination with local jurisdictions and in accordance with the City of Santa Cruz's Long-Range Water Demand Forecast and the Association of Monterey Bay Area Governments' 2022 Regional Growth Forecast, any growth that would be generated by the cumulative residential and mixed-use projects listed in **Table 4-1** is accounted for within the Urban Water Management Plan's water supply assessment. Therefore, cumulative impacts to water supply would be less than significant. The Project would only require minimal and temporary amount of water during construction activities and would not result in a permanent increase in water demand. Therefore, the Project's contribution to cumulative impacts to water infrastructure and supply **would not be cumulatively considerable**.

Wastewater. The Santa Cruz WWTF, which provides service for City and County residents through an agreement with the Santa Cruz County Sanitation District (SCCSD), has a current rated design capacity of 17 million gallons of wastewater per day (gpd) with the ability to accommodate a wet weather flow of 81 million gpd (City of Santa Cruz 2012). The City of Santa Cruz residents currently generate between 5 and 6 million gpd, and the SCCSD's customers also currently generate between 5 and 6 million gpd. Therefore, the WWTF typically has an average daily flow of approximately 12 million gpd and has the remaining capacity to treat an additional 5 million gpd (Wolfman, pers. comm. 2022). As both SCCSD's customers and City of Santa Cruz residents currently generate between 5 and 6 million gpd each, it is reasonable to assume that the cumulative development projects listed in **Table 4-1** would generate less than 6 million gpd. Given the Santa Cruz WWTF's remaining capacity of 5 million gpd, it can be assumed that the WWTF would be able to adequately serve the cumulative projects listed in **Table 4-1**, and cumulative impacts to wastewater infrastructure would be less than significant. The Project would only generate wastewater temporarily through the use of portable toilets by construction workers. The Project would not result in a permanent demand for wastewater treatment. Therefore, the Project's contribution to cumulative impacts to wastewater infrastructure **would not be cumulatively considerable**.

Stormwater. Existing stormwater in the Project's vicinity either drains to a series of gutters and underground pipes in the City of Santa Cruz or drains to nearby streets before entering the underground pipes and other human-made runoff conveyance systems in Santa Cruz County. Any cumulative project disturbing more than once acre of land would be subject to the requirements of the Construction General Permit, resulting in the implementation of a Stormwater Pollution Prevention Plan and best management practices. Such requirements would ensure that the construction of cumulative projects would not result in the need for relocation or construction of new or expanded stormwater drainage facilities. However, buildout of the cumulative projects listed in **Table 4-1** would result in an increase in impervious surfaces that could alter drainage patterns and result in the inability for existing stormwater drainage infrastructure to adequately convey flows. However, the City of Santa Cruz Municipal Code Section 24.14.050 sets standards for drainage improvements required in conjunction with new construction (City of Santa Cruz 2012). In addition, the City examines all proposed development projects to ensure that drainage is addressed in the overall design (City of Santa Cruz 2012). The County requires new discretionary development projects to provide both on and off-site improvements for adequate drainage (County of Santa Cruz 1994). The City and the County would require adequate drainage facilities for new development through the review of proposed development projects. With the cumulative projects' compliance

with applicable laws and regulations and their incorporation of required construction and operational best management practices, no significant cumulative impacts are anticipated. Nonetheless, implementation of the Project's built-in drainage improvements would ensure that the Project would not overload the existing storm drain system in its vicinity, nor would the Project require new or expanded water drainage facilities beyond those proposed and would be subject to the same applicable laws. Therefore, the Project's contribution to this potentially significant cumulative impact **would not be cumulatively considerable.**

Solid Waste. The RRF Landfill has an estimated remaining capacity of 4,806,477 cubic yards of solid waste. Solid waste generated by the Project would represent less than 1% of this remaining capacity. Any future development, including the projects listed in **Table 4-1**, would be required to participate in current and planned solid waste reduction programs. Furthermore, according to the City of Santa Cruz General Plan, the RRF Landfill's permitted disposal area was increased from 40 to 67 acres in the mid-1990. This increase, along with the waste reduction and recycling programs described above, extended the life of the RRF landfill to approximately 2052 (City of Santa Cruz 2012). As such, the RRF Landfill would have the capacity to accept construction waste generated by cumulative projects within the City's jurisdiction, listed in **Table 4-1** through 2052. Waste generated by development of projects within the County's jurisdiction would likely be disposed at Buena Vista Landfill, which is anticipated to have capacity until 2028. Additionally, excess construction waste may be disposed at the regional Monterey Peninsula Landfill in Marina. These landfills have adequate capacity to accept construction waste generated by the cumulative projects within the County's jurisdiction listed in **Table 4-1**. Therefore, cumulative impacts to solid waste infrastructure would be less than significant, and the Project's contribution **would not be cumulatively considerable**.

In summary, planned development or buildout of cumulative projects would increase demands on utility infrastructure. However, there are no cumulative significant impacts anticipated from cumulative projects. The Project's contribution to utility and service system impacts **would not be cumulatively considerable.**

4.1.18 Wildfire

The geographic extent for the analysis of cumulative impacts to wildfire is the City of Santa Cruz and the service area for the emergency service providers that serve Santa Cruz County, as described in Section 3.11, *Public Safety and Services*. The geographic context for the analysis of cumulative impacts that would 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, is the Project corridor and immediate surrounding areas.

IMPACT WIDF-C CUMULATIVE DEVELOPMENT WOULD NOT RESULT IN SIGNIFICANT CUMULATIVE IMPACTS TO UTILITIES AND SERVICE SYSTEMS. THE PROJECT'S CONTRIBUTION WOULD NOT BE CUMULATIVELY CONSIDERABLE.

As shown in **Table 4-1**, past, present, and reasonably foreseeable projects are located in the City and County and not within an identified State Responsibility Lands or lands classified as a very high hazard severity zone (CAL FIRE 2008).

Emergency Response Plan. Construction and operation associated with cumulative development could result in activities that could interfere with adopted Emergency Response or Emergency Evacuation Plans, such as temporary construction barricades or other obstructions that could impede emergency access. However, cumulative projects would be required to comply with the requirements of the Project would not impair implementation of or physically interfere with the County of Santa Cruz Operational Area Emergency Management Plan or City of Santa Cruz

Emergency Operations Plan and City traffic requirements. Therefore, no significant cumulative impacts are anticipated, and the Project's contribution **would not be cumulatively considerable.**

Exposure to Pollutant Concentrations. Cumulative projects could potentially have an impact if several projects were to experience wildfire simultaneously causing pollutant concentrations to flow through the air at an unprecedented rate. Pursuant to applicable codes and regulations, including but not limited to the California Fire Code and CAL FIRE fire-safe design requirements, all projects would be constructed and designed to minimize the potential for uncontrolled spread of wildfire that could expose project occupants to pollutant concentrations. The Project does not include housing or other structures that would result in permanent occupants along the Project corridor. There is ongoing vegetation trimming and removal along the RTC-owned rail corridor, which would continue. Therefore, no significant cumulative impacts are anticipated, and the Project's contribution **would not be cumulatively considerable**.

Exacerbated Risk from Infrastructure Installation. A cumulative impact could occur if multiple cumulative projects were to install infrastructure that would combine to exacerbate fire risk. Any new infrastructure would be required to comply with the necessary regulations, including the California Fire Code, CAL FIRE fire-safe design requirements, and the City's Fire and Public Works Standards, to minimize any fire risks. Therefore, the cumulative impact would not be significant. The Project would not require the installation or maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that would exacerbate the fire risk or impact the environment. Trail maintenance activities would involve routine maintenance of vegetated portions of the trail, including weed removal, tree/shrub trimming, and fallen tree removal, that would prevent overgrowth that could potentially fuel wildfire. Therefore, no significant cumulative impacts are anticipated, and the Project's contribution **would not be cumulatively considerable**.

Post-Fire Risks. A cumulative impact could occur if post-fire conditions such as hillside instability caused a landslide or flooding to occur. The Project corridor is generally flat and does not contain any mapped landslides. Construction of projects considered in the cumulative analysis would involve grading and other earthmoving activities that could result in temporary and short-term localized soil erosion or landslides. However, these site-specific impacts are not expected to combine with the effects of other regional activities because compliance with the National Pollutant Discharge Elimination System-required Stormwater Pollution Prevention Plan would control erosion and construction-related contaminants at each construction site. Therefore, no significant cumulative impacts are anticipated, and the Project's contribution **would not be cumulatively considerable**.

In summary, the potential cumulative impacts associated with wildlife would not be significant; therefore, the Project's contribution **would not be cumulatively considerable**.

4.2 Growth Inducement

Section 15126.2(g) of the *CEQA Guidelines* requires a discussion of a proposed project's potential to induce growth. Specifically, an EIR must discuss the ways in which a project could foster economic or population growth. Economic and population growth does not necessarily cause significant physical changes to the environment; however, depending upon the type, magnitude, and location of growth, it can result in significant environmental effects. A project's growth-inducing potential is therefore considered significant if growth generated by the project could result in significant effects in one or more environmental issue areas.

4.2.1 Employment, Household, and Population Growth

Project implementation would not result in the construction of new homes or businesses. As a multi-use trail, the Project would not increase the residential or employment populations of Santa Cruz County. Rather, it would provide alternative transportation and recreational opportunities for residents and out-of-county visitors to walk and use bicycles, instead of their cars. The Proposed Project is not expected to meaningfully change or substantially increase the number of residents or visitors to the City of Santa Cruz.

The Project could directly generate short-term employment during construction of the trail; however, jobs created by this additional activity would likely be filled by the local workforce and would not result in a significant source of employment of economic growth.

Therefore, growth inducement impacts associated with the Proposed Project, with or without the optional Interim Trail, would be **less than significant.**

4.2.2 Removal of Obstacles to Growth

The Project would result in the construction of a new multi-use trail that would provide an accessible bicycle and pedestrian path for active transportation, recreation, and nature education. The lack of a trail is not considered an obstacle to growth.

A common obstacle to growth is the lack of utilities (e.g., water supply, wastewater treatment capacity, roadways). However, the Project would not require the extension of utilities or otherwise remove obstacles to growth. As discussed in Chapter 2, *Project Description*, the Project does not include landscaping along the trail that would require the extension of water infrastructure, nor restrooms that require wastewater treatment. The Project includes a limited amount of new lighting along the trail alignment for safety purposes and would result in new traffic signal poles and arms at the Seabright Avenue roadway crossing, as well as the installation of rectangular rapid-flashing beacons at the 7th Avenue and 17th Avenue roadway crossings. These additions would be operated through existing energy infrastructure.

As such, the Proposed Project, with or without the optional Interim Trail, would not remove an obstacle to growth. This impact would be **less than significant.**

4.3 Irreversible Environmental Effects

Section 15126.2(c) of the *CEQA Guidelines* requires a discussion of significant irreversible environmental changes that would occur as a result of a proposed project. This includes analysis of the use of non-renewable resources and irreversible environmental changes. In general, non-renewable resources imply energy resources, but may also pertain to the permanent loss of agricultural, biological, mineral, or other natural resources.

The use of non-renewable resources during short-term construction and long-term operation of the Project may be irreversible and irretrievable. Implementation of the Proposed Project, with or without the optional Interim Trail, would result in the irretrievable and irreversible commitment of non-renewable natural resources, including energy resources such as petroleum, coal, water resources, and mineral resources used for construction materials, such as gravel, sand, asphalt, and metals. This impact would be greater with implementation of the optional Interim Trail because it requires two additional construction phases.

Construction and operation of the Project would result in the permanent loss of fossil fuels for the production of petroleum or natural gas to fuel construction and maintenance vehicles, and to provide electricity for construction lighting. Construction of the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)* would require approximately 1,640 cubic yards of imported aggregate and 22,850 square feet of concrete. Construction of the *Optional First Phase: Trail on the Rail line (Interim Trail)* would require approximately 4,328 cubic yards of imported aggregate and 38,420 square feet of concrete. Aggregate base is actively mined in the Monterey Bay area which is estimated to meet demand for 41 to 50 years (California Geological Survey 2012), and supplies for the Project are expected to come from local sources. The demand created by the Proposed Project, with or without the optional Interim Trail, would not represent a significant impact on that supply.

As discussed in Section 3.14, *Utilities and Service Systems*, operation of the Proposed Project would not result in a permanent demand for water, because the Project does not propose additional bathrooms, water fountains, irrigation, or other water-dependent uses and features.

As described above, construction and maintenance of the Project would consume building materials and energy, some of which are non-renewable resources. However, by providing opportunities for the use of active transportation modes, implementation of the Project may help reduce long-term dependence on automobiles and non-renewable petroleum resources. Consequently, the Proposed Project may have beneficial impacts related to the long-term use of non-renewable resources. Because of this potentially beneficial long-term impact, the consumption of non-renewable resources during construction and operation of the trail would be justified. Anticipated energy consumption of the Proposed Project is analyzed in further detail in Section 3.15.3, *Energy*.

Finally, with respect to agricultural resources and other mineral resources, the Proposed Project was determined to have a less than significant impact, as described in Section 3.15.2, *Agricultural and Forestry Resources*, and Section 3.15.6, *Mineral Resources*.

As described in Section 3.3, *Biological Resources*, and Section 4.1.4, *Biological Resources*, the Proposed Project would result in significant impacts to biological resources from tree removal and fragmentation of habitat and wildlife corridors. Mitigation identified in Section 3.3 includes development of a Project-specific Biological Resources MMP for Impacts to Biological Resources Resulting from Trail Construction and Operation (Mitigation Measure BIO-9b). Mitigation identified in Section 4.1.4 includes incorporating cumulative conservation goals into the MMP (Mitigation Measure BIO-C) to help reduce the Project's contribution to significant cumulative impacts.

4.4 Significant and Unavoidable Effects

CEQA requires decision makers to balance the benefits of a proposed project against it unavoidable environmental risks in determining whether to approve a project. The analysis contained in this EIR identified the following significant and unavoidable impacts resulting from the Proposed Project.

- Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)
    - □ Aesthetics
        - Adverse effect on scenic vistas through the removal of mature trees (Impact AES-1)
        - Inconsistency with policies that pertain to tree and vegetation removal (Impact AES-2)
        - Cumulative aesthetics impacts from increased development in open spaces disrupting scenic vistas from tree removal (AES-C)

- □ Biological Resources
  - Adverse effect on monarch butterfly and autumnal and/or wintering roost sites from tree removal (BIO-2)
  - Interference with wildlife movement from tree removal and habitat fragmentation (BIO-11)
  - Conflict with policies and ordinances protecting trees (BIO-12)
  - Cumulative biological resources impacts from tree removal and fragmentation of habitat and wildlife corridors (BIO-C)

- Optional First Phase: Trail on the Rail line (Interim Trail)
  - □ Aesthetics
    - Adverse effect on scenic vistas through the removal of mature trees (Impact AES-1)
    - Inconsistency with policies that pertain to tree and vegetation removal (Impact AES-2)
    - Cumulative aesthetics impacts from increased development in open spaces disrupting scenic vistas from tree removal (AES-C)
  - □ Biological Resources
    - Adverse effect on monarch butterfly and autumnal and/or wintering roost sites from tree removal (BIO-2)
    - Interference with wildlife movement from tree removal and habitat fragmentation (BIO-11)
    - Conflict with policies and ordinances protecting trees (BIO-12)
    - Cumulative biological resources impacts from tree removal and fragmentation of habitat and wildlife corridors (BIO-C)
  - □ Cultural Resources
    - Adverse effect on historical resources from removal of the Santa Cruz Branch Rail Line (CR-1)
    - Cumulative impact to historical resources from removal of the Santa Cruz Branch Rail Line (Impact CR-C)

5 Project Alternatives

According to Section 15126.6 of the *CEQA Guidelines*, an EIR shall describe and evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project's basic objectives, but that would avoid or substantially lessen identified significant environmental impacts of the project. CEQA does not require that an EIR present the alternatives analysis in the same level of detail as the assessment of the proposed project, and does not require that every conceivable alternative to a project be considered. Rather, an EIR must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making.

To develop a reasonable range of alternatives to the **Coastal Rail Trail Segments 8 and 9 Project** (Project), the City considered the following:

- Project Objectives
- Significant Impacts of the Proposed Project
- Alternatives Suggested during the Scoping Process

Through this process, the City identified seven possible alternatives, including different project design options or features, for consideration. Of these, one was incorporated into the Proposed Project as *Optional First Phase: Trail on the Rail line (Interim Trail)* and is evaluated in Chapter 3, *Environmental Impact Analysis*; one (1) was identified as a Project alternative to be evaluated in this Chapter 5, in addition to the No Project alternative required by CEQA; and five were considered but dismissed from further consideration because the alternative did not reduce a significant effect of the Proposed Project, it could result in additional impacts, and/or the feasibility is uncertain.

This chapter includes a description of how the Project alternatives were developed (Section 5.1, *Development of Alternatives*); an evaluation of the alternatives in comparison to the Proposed Project (Section 5.2, *Alternatives Evaluated in Draft EIR*); and identification of the environmentally superior alternative (Section 5.3, *Environmentally Superior Alternative*).

5.1 Development of Alternatives

Project Objectives

As described in Section 2.3, *Project Purpose and Objectives*, the Project purpose is to provide an ADA-accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the existing rail corridor.

The Project objectives are based on and consistent with objectives and policies in the approved MBSST Network Master Plan.

The Project objectives include the following:

1. Provide a continuous public trail with continuity in design along the Santa Cruz Branch Line railroad corridor and connecting spur trails in Santa Cruz County (Master Plan objective 1.1)
2. Develop the trail so future rail transportation service along the corridor is not precluded (Master Plan Policy 1.2.4)

3. Maximize ocean views and scenic coastal vistas along a coastal alignment for experiencing and interpreting the Monterey Bay National Marine Sanctuary (sanctuary), coastal environment, local history, and affected communities (Master Plan Policy 1.1.2 and 1.1.4, objective 2.1)
4. Maximize safety and serenity for experiencing and interpreting the sanctuary and landscapes by providing a trail separate from roadway vehicle traffic (Master Plan goal 1)
5. Minimize trail impacts to private lands, including agricultural, residential, and other land uses (Master Plan objective 1.5)
6. Minimize trail impacts to sensitive habitat areas and special-status plant and animal species (Master Plan Objective 1.4, Policy 1.4.1)
7. Comply with requirements of local, state, and federal agencies with jurisdiction

Significant Impacts of Proposed Project

The *CEQA Guidelines*, Section 15126.6(f), states that "alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project."

As described in Sections 3.1 through 3.14 and summarized in **Table ES-1** in the Executive Summary, the Proposed Project would result in potentially significant impacts (before mitigation) for the following CEQA resource topics; therefore, brief summaries of the potentially significant impacts for these topics are presented below.

- Aesthetics
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Noise
- Tribal Cultural Resources

All impacts could not be reduced to a less than significant level with mitigation; therefore, there would be significant and unavoidable project impacts associated with the following resource topics.

- Aesthetics
- Biological Resources
- Cultural Resources

Aesthetics

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

The Proposed Project (Ultimate Trail Configuration) would require the removal of approximately 381 trees of various sizes, including mature and heritage trees along Segment 9 (as described under *Biological Resources*). As described in Section 3.1, *Aesthetics*, the removal of trees would disrupt existing scenic vistas as experienced from local roadways and pedestrian facilities. Although trees removed to accommodate the Project would be replaced at an appropriate location and ratio determined by qualified biologists, in coordination with the regulatory permitting agencies and jurisdictional authorities (e.g., City, County, State Parks), the exact location of replacement trees is uncertain at this time, and timing of growth to maturity equivalent to the trees that would be removed cannot be predicted with certainty. Further, although the Project would be consistent with

most applicable regulations that govern scenic quality, the tree removal and effect on scenic vistas would be inconsistent with Santa Cruz County General Plan Policy 5.10.3, which aims to protect public vistas.

Therefore, despite required tree replacement and other mitigation measures identified in Section 3.3, *Biological Resources*, the tree removal would affect public views of the Project corridor and disrupt existing scenic vistas of mature vegetation; and this would be inconsistent with policies protecting scenic quality. Therefore, impacts involving scenic vistas would be **significant and unavoidable**.

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

The Proposed Project with the optional Interim Trail would result in similar impacts to those described above. Impacts from the optional Interim Trail would require the removal of approximately 124 trees initially, for Part 1 of the Interim Trail, to remove the rail and construct the trail on the rail bed. Then, later for Part 3, the Ultimate Trail Configuration would be constructed requiring removal of another 280 trees, resulting in a total removal of approximately 404 trees. This would affect public views of the Project corridor and would be inconsistent with Policy 5.10.3. Impacts would be **significant and unavoidable**.

Biological Resources

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

The Proposed Project (Ultimate Trail Configuration) could adversely affect existing biological resources within the study area including: Santa Cruz tarplant within Twin Lakes State Beach open space, monarch butterfly roost sites, sensitive fish and wildlife species, including nesting birds and roosting bats, sensitive habitats, wetlands and other aquatic resources, wildlife movement, and protected trees. The trail has been designed to avoid impacts to the extent feasible while accommodating a Class 1 multi-use trail and active rail line.

The Ultimate Trail Configuration would result in removal of approximately 381 trees. Of these, 265 are native trees, 107 are identified as City Heritage and County Significant trees, and 47 are *native* Heritage and Significant trees. Many of these trees are located in known and potential monarch roost sites, and sensitive coast live oak woodland and riparian habitat types. Additionally, extensive tree and understory vegetation removal for the Project would affect wildlife movement within the corridor and inhibit wildlife dispersal and connectivity between open spaces along the rail corridor (e.g., Woods Creek, Twin Lakes State Beach open space).

The Project could also result in impacts to Santa Cruz tarplant due to increased visitation and potential off-trail hiking in Twin Lakes State Beach; potential adverse effects to protected fish species and marine mammals, including tidewater goby, coho salmon, steelhead, and southern otter from encroachment into riparian corridors and increased trash and sedimentation; impacts to habitat for western pond turtle and if present, black salamander; disturbance to nesting birds and roosting bats including tree removal, ground disturbance, and noise; and encroachment or displacement of San Francisco dusky-footed woodrat houses.

The Ultimate Trail Configuration would impact sensitive habitats including approximately 1.49 acres of coast live oak woodland and forest along the rail corridor, and 0.11 acres of riparian habitat associated with Pilkington Creek and Leona Creek. Additionally, the Project would displace a 0.11-acre (1,350 square feet) ditch wetland immediately east of the San Lorenzo River Trestle extending to Mountain View Avenue north of the existing rail tracks.

Several mitigation measures have been identified to reduce impacts, including construction BMPs, timing restrictions, environmental training, monitoring, and informational signage (BIO-1a, BIO-2, BIO-9a, BIO-9c, BIO-10a). Mitigation also includes development and implementation of a comprehensive Biological Resources Mitigation and Management Plan (MMP) and Aquatic Resources MMP, developed in coordination with local jurisdictions and regulatory agencies, to compensate for impacts (BIO-9b, BIO-10b). With implementation of these mitigation measures, impacts to Santa Cruz tarplant, special-status wildlife, nesting birds, roosting bats, sensitive habitats, and aquatic resources (wetlands) would be **less than significant with mitigation** (Mitigation Measures BIO-1a, BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

However, impacts from tree removal in the corridor and the associated impacts on monarch butterfly roosting habitat and wildlife movement would not be reduced to a less than significant level, because replacement trees would take many years to mature and provide adequate buffer quality, functions and values for the monarch roost sites and wildlife movement, and because the availability of suitable mitigation sites in proximity to the Project corridor is limited. Therefore, these impacts would be **significant and unavoidable**.

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

The impacts of the Proposed Project with the optional Interim Trail would be similar to, but slightly greater than, those described above for the Ultimate Trail Configuration. The optional Interim Trail is generally more impactful than the Ultimate Trail Configuration because the 16-foot-wide Interim Trail would be centered on the existing rail line, resulting in impacts south of the tracks that would not occur from the Proposed Project without the optional Interim Trail (the Ultimate Trail Configuration would be entirely north of the tracks). In particular, this would increase potential impacts to the Santa Cruz tarplant population located in Twin Lakes State Beach and thus require an additional mitigation measure to install protective fencing between the trail and tarplant population (Mitigation Measure BIO-1b). Furthermore, the optional Interim Trail would result in two additional construction periods with potential for adverse effects to sensitive biological and aquatic resources.

Similar to the Proposed Project (Ultimate Trail Configuration), impacts to Santa Cruz tarplant, special-status wildlife, nesting birds, roosting bats, sensitive habitats, and aquatic resources (wetlands) would be **less than significant with mitigation** (Mitigation Measures BIO-1a, BIO-1b, BIO-2, BIO-9a, BIO-9b, BIO-9c, BIO-10a, BIO-10b).

Also similar to the Proposed Project (Ultimate Trail Configuration), extensive tree removal in the corridor, and the resulting impacts to monarch roosting habitat and wildlife movement would not be reduced to a less than significant level because replacement trees would take many years to mature and provide ecosystems services including adequate buffer quality, functions and values for the monarch roost sites, and wildlife movement. Further, mitigation sites for replacement planting that are in proximity to the Project corridor and would therefore mitigate these impacts are limited. Therefore, these impacts would be **significant and unavoidable**.

Cultural Resources

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

The Proposed Project (Ultimate Trail Configuration) would adversely affect a known historical resource, the Santa Cruz Branch Rail Line. The placement of a trail and fencing immediately adjacent to the rail line would introduce a new visual feature and use that would alter the setting of the Santa Cruz Branch Line. A partial material impairment is defined by CEQA as the alteration in an

adverse manner of historically significant physical characteristics. To accommodate both the railroad tracks and the trail, 1,670 linear feet of railroad track would be realigned up to 7.5 feet southward within the RTC-owned rail corridor. Realignment of the rail would be a relatively small portion of the overall rail that would not change the overall physical characteristics of the resource. As a result, the Project would cause the partial material impairment of the Santa Cruz Branch Rail Line from the introduction of fencing and rail realignment. Although the Project would incorporate educational signage, Mitigation Measure CR-1a would require the signage to provide insight into the history of the rail line and its construction and design. The exhibits would compensate for the partial material impairment of the Santa Cruz Branch Rail Line by providing users with insight into the significance of the resource in a manner which may not be readily available otherwise. As described in Section 3.4, *Cultural Resources*, implementation of this mitigation measure would reduce the impact to **less than significant with mitigation** (Mitigation Measure CR-1a)**.**

Additionally, ground disturbance during construction could adversely affect undiscovered historical resources, archaeological resources, or human remains. Mitigation Measure CR-2 would implement protocols in the event that archaeological resources are unexpectedly encountered during ground-disturbing construction activities. Implementation of this mitigation measure would reduce the impact to **less than significant with mitigation** (Mitigation Measure CR-2)**.**

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

The Proposed Project with the optional Interim Trail would result in greater impacts than those described above. Impacts to archaeological resources and human remains would be similar but greater because the two additional construction phases would increase the risk of discovery. However, like for the Ultimate Trail Configuration, implementation of mitigation would reduce the impact to **less than significant with mitigation** (Mitigation Measure CR-2).

Additionally, the Proposed Project with the optional Interim Trail would result in greater impacts to historical resources due to the removal of the Santa Cruz Branch Rail Line. Even with implementation of Mitigation Measures CR-1a and CR-1b described above, the impact from the optional Interim Trail would be **significant and unavoidable** (Mitigation Measures CR-1a, CR-1b).

Geology and Soils

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

During construction of the Proposed Project (Ultimate Trail Configuration), ground disturbance may directly or indirectly disrupt or destroy a unique paleontological resource, or site or unique geologic feature. As described in Section 3.5, *Geology and Soils*, implementation of Mitigation Measure GEO-5 would reduce impact to a less than significant level by requiring paleontological resources monitoring during construction. Therefore, the impact to paleontological resources would be **less than significant with mitigation** (Mitigation Measure GEO-5).

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

The construction-related impact of the Proposed Project with the optional Interim Trail would be similar to but greater than those described above because there would be two additional phases of project construction and ground-disturbing activities, thereby increasing the risk of disturbing paleontological resources. However, the impact would still be **less than significant with mitigation (**Mitigation Measure GEO-5)**.**

Hazards and Hazardous Materials

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

During construction of the Proposed Project (Ultimate Trail Configuration), ground disturbance could release existing soil contaminants, potentially exposing the public or environment to hazardous materials. The Project corridor is located within 140 feet of the Boardwalk Entry 2 and Ledyard hazardous material sites, listed pursuant to Government Code, Section 65962.5, and the Project corridor includes potentially contaminated soils from the railroad. Mitigation Measure HAZ-2a would require soil sampling prior to Project construction, as well as implementation of a program to remediate or manage known contaminated soil during construction. Mitigation Measure HAZ-2b would ensure a Soils Management Plan is developed by a qualified engineer for the Project corridor, which would include measures to avoid exposure to contaminants. As described in Section 3.7, *Hazards and Hazardous Materials*, the impact would be **less than significant with mitigation** (Mitigation Measure HAZ-2a, HAZ-2b).

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

The Proposed Project with the optional Interim Trail would have substantially greater potential impacts with respect to release of hazardous materials than the Proposed Project without the Interim Trail. Ground-disturbing construction would occur three times for the Interim Trail, instead of once, which would increase the potential for exposure to contaminants. This impact would still be **less than significant with mitigation** (Mitigation Measures HAZ-2a, HAZ-2b).

Additionally, removal of the existing rail line during construction of Part 1 of the Interim Trail would have the potential to release contaminants associated with the rail line, as described in Section 3.7 (Impact HAZ-2). Mitigation Measure HAZ-2c would require the ballast be tested for hazardous materials, and contaminated ballast reused for base rock would be capped with asphalt to avoid the exposure of future trail users to arsenic or any other contaminants, or would be transported to an appropriately designated disposal facility. The impact **would be less than significant with mitigation** (Mitigation Measure 2c).

Noise

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

Construction of the Proposed Project (Ultimate Trail Configuration) could expose residences along the Project corridor to substantial temporary increase in noise levels and groundborne vibration and noise. Mitigation Measures N-1 would require the construction contractor to implement noise-reducing measures where use of construction equipment occurs within 550 feet of residences or hotels. Mitigation Measure N-3 would the construction contractor to provide written notification at least 3 weeks prior to the start of any construction activities involving the use of vibratory equipment to all residential units located within 50 feet of the construction area that will produce the vibration. The impact would be **less than significant with mitigation** (Mitigation Measure N-1, N-3).

OPTIONAL FIRST PHASE: TRAIL ON THE RAIL LINE (INTERIM TRAIL)

The Proposed Project with the optional Interim Trail would result in similar but slightly greater noise and vibration impacts than those described above. Construction of the optional Interim Trail requires three construction periods, two of which involve demolition. Part 1 would demolish the

existing rail and construct the Interim Trail; Part 2 would demolish the Interim Trail and construct the rail; and Part 3 would construct the Ultimate Trail Configuration, thereby increasing the total construction activities and duration. However, the impact would be **less than significant with mitigation** (Mitigation Measure N-1, N-3).

Tribal Cultural Resources

PROPOSED PROJECT: TRAIL NEXT TO RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

During construction of the Proposed Project (Ultimate Trail Configuration), ground disturbance has the potential to encounter unknown tribal cultural resources. Implementation of Mitigation Measures TCR-1a would require a Native American monitoring during construction activities, and TCR-1b would ensure that any unanticipated discoveries of tribal cultural resources are avoided or, where avoidance is infeasible provides for appropriate treatment. Therefore, the impact would be **less than significant with mitigation** (Mitigation Measures TCR-1a, TCR-1b)**.**

OPTIONAL FIRST PHASE: TRAIL ON RAIL LINE (INTERIM TRAIL)

The Proposed Project with the optional Interim Trail would result in similar but slightly greater impacts than those described above, because the two additional construction phases would increase the risk of discovery. Project construction involves excavation and ground-disturbing activities up to 6 feet deep which includes removal of the rail and construction of the Interim Trail, which has the potential to encounter unknown tribal cultural resource. The impact would still be **less than significant with mitigation** (Mitigation Measures TCR-1a, TCR-1b)**.**

Alternatives Suggested during the Scoping Process

The NOP for the Project was issued on September 14, 2021, and a public scoping meeting was held on October 6, 2021. The NOP, written comments received, and a summary of the comments on the NOP (i.e., scoping comments) are included in **Appendix B**.

The scoping comments include the following suggested project alternatives, including design options and/or features (hereinafter considered alternatives). The description below also indicates if the alternative has been carried forward for evaluation or dismissed from further consideration.

Interim Trail

Several comments suggested analysis of an “Interim Trail” or “Railbank with Interim Trail” and renaming what was presented in the NOP as “Alternative 1: Railbank with Trail” to include the term “Interim.”

The City, in coordination with the County and RTC, included an Interim Trail as an Optional First Phase of the Proposed Project (as opposed to a separate stand-alone alternative) and call it *Optional First Phase: Trail on the Rail line (Interim Trail)*. The optional Interim Trail includes three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail. Refer to Chapter 2, *Project Description*, for additional detail. Accordingly, it is evaluated as part of the Proposed Project analysis in Chapter 3.

As described in Section 2.4.2, *Optional First Phase: Trail on the Rail Line (Interim Trail)*, this option could occur if the common carrier files for abandonment of freight operations along the Santa Cruz Branch Rail Line with the Surface Transportation Board (STB), or if the RTC files for adverse abandonment. If this occurs, all or a portion of the SCBRL would likely be railbanked to preserve the

corridor for future freight re-activation, and then could be used for a multi-use trail as an interim condition. Refer to Chapter 1, *Introduction*; Section 1.2.4, *Subsequent Actions and Considerations*; *Railbanking*; for additional information regarding railbanking.

Inclusion of the San Lorenzo River Trestle Bridge

Comments on the NOP include suggestions that the San Lorenzo River Trestle Bridge (also called the Boardwalk Trestle in the comments) be part of Segment 9 and included in the railbanking or Interim Trail analysis.

According to the MBSST Network Master Plan, the San Lorenzo River Trestle Bridge is part of Segment 8, not Segment 9. The Proposed Project, including the Optional First Phase (Interim Trail), excludes the San Lorenzo River Trestle Bridge because this portion of Segment 8 has already been constructed. As stated in Section 2.4.1, there would be no improvements to the portion crossing the SLR Trestle Bridge because this section was completed in 2019, when the City replaced the existing 4-foot-wide wooden walkway with a new light weight, 10-foot-wide bicycle/pedestrian bridge along the inland side of the railroad tracks.

This alternative or design option has been dismissed from further consideration and evaluation in this EIR because: this portion of the Coastal Rail Trail is already constructed; this alternative would not likely reduce the severity of any of the significant effects of the Proposed Project; and this alternative could result in additional construction-related impacts to the San Lorenzo River (designated critical habitat), permanent impacts to the Santa Cruz Branch Rail Line, and impacts to trail users by disrupting use of the existing bicycle/pedestrian path on the trestle bridge if it needs to be closed for safety during construction. Further, the bridge is used by Roaring Camp Railroad when there is an emergency on the Boardwalk to clear the area for emergency responders.

Trail Next to another Transit Option

Comments on the NOP include a suggestion that the alternatives analysis include a trail along with another type of transit option in place of existing freight rail line (e.g., a dedicated trolley or bus lanes).

No rail transit service or other transit options along the rail corridor are proposed as part of the Project, and there would be no other changes in the rail corridor as a result of the Project, other than those related to the implementation of the Ultimate Trail Configuration, including rail realignment in some locations as described in Section 2.4.1.

As described in Chapter 1, the RTC has conducted extensive studies regarding transit options along the rail corridor, including the Rail Transit Feasibility Study (2015), Unified Corridor Investment Study (2019), and Transit Corridor Alternatives Analysis (2021). The preferred scenario adopted by the RTC includes protecting the rail line in public ownership for high-capacity public transit use by maintaining the tracks and allowing freight and excursion service. Commuter rail remains in the RTC's Regional Transportation Plan, but on the financially unconstrained list of projects, due to the lack of identified funding to the region for a commuter rail project.

This alternative to analyze a trail alignment along a transit alignment has been dismissed from further consideration and evaluation in this EIR for the following reasons. The alignment of future transit services in the rail corridor has not been defined, and funding for transit services in the rail corridor has not been identified; therefore, it is too speculative. This alternative would not likely reduce the severity of any of the significant effects of the Proposed Project. Therefore, future transit use is not the focus of the environmental analysis. The focus is the difference in environmental

impacts as they relate to constructing the trail. However, consistent with the project objectives, the Proposed Project does not preclude future rail transportation service along the corridor.

Grade Separations at Roadway Crossings

Comments on the NOP include a suggestion to analyze alternatives to grade separate the trail at roadways crossings for improved safety.

As described in Sections 2.4.1 and 2.4.2, the Project includes several safety features at the four roadway crossings, such as bulb outs, chicanes on the trail (curves added to slow trail users before the intersection), raised median along the road centerline providing a midpoint refuge for trail users, signage and striping on the trail and roadway, and rectangular rapid-flashing beacons (RRFBs) on the roadways. Adding more substantial grading or structurally separating the trail from roadway (e.g., a bike/ped bridge or overpass over the roadway) would create additional construction-related and visual impacts.

Grade separated crossing have been dismissed from further consideration and evaluation in this EIR for the following reasons. The Project includes several safety features at roadway crossings. This alternative would not likely reduce the severity of any of the significant effects of the Proposed Project. This alternative would result in additional construction-related impacts and visual impacts due to the required size. A grade separation structure would need to be large enough to meet ADA requirements and bicycle access, which would not fit within the rail corridor. Further, it is anticipated that, because it is a relatively short distance across the roadway, trail users would simply cross the street and avoid the use of the large structure which would take longer and require ascent/descent.

Coastal Side (Maximize Coastal Access)

Comments on the NOP include a suggestion to evaluate alternatives to maximize access from the trail to coastal destinations such as East Cliff Drive, the Harbor, Twin Lakes State Beach trails, and Simpkins Swim Center.

As described in Section 2.4.1, the Proposed Project includes several trail connections to adjacent roadways and trails, including a connection to the West Harbor, a connection to Twin Lakes State Beach near El Dorado Avenue, and two connections to Simpkins Swim Center. Additionally, the City included an East Harbor Connection as a design option of the Proposed Project. These trail connections are included in the analysis of the Proposed Project in Chapter 3.

The City, in coordination with the County and RTC, considered an alternative that would maximize or facilitate coastal access by locating the trail on the coastal side of the tracks because the majority of the Ultimate Trail Configuration is on the inland side of the tracks, and there could be safety fencing between the tracks and the trail that could inhibit direct access to the coastal side of the tracks at some locations. There are substantial constraints to locating the trail on the coastal side of the tracks including, but not limited to, the need for new CPUC-approved rail crossings, reducing neighborhood access, removing connections to the Santa Cruz Harbor, and right-of-way constraints, as described below. Further, it would not reduce any of the significant impacts. Therefore, locating the trail on the coastal side of the tracks has been dismissed from further consideration and evaluation in this EIR:

- To locate the trail on the coastal side, the trail must cross the rail line. Rail line crossings are limited to existing designated California Public Utilities Commission (CPUC) rail crossings. Authority to construct a new public rail crossing is granted by the CPUC through a “formal

application process which results in an order issued by the CPUC to ensure a safely designed, constructed, and maintained crossing."

- The existing access from Segment 8 at the east end of the SLR Trestle Bridge is located on the north (inland) side of the tracks. From the SLR Trestle Bridge to Mott Avenue, there are no pedestrian crossings from the north side of the rail line to the south (coastal side) due to the separation of grade from Murray Street, and because there are no safe pedestrian crossings across Murray Street in this area (which is very high traffic volume). Continuing the trail from the SLR Trestle Bridge on the inland side would provide trail a connection to the residential neighborhood to the north, as well as encourage people to stay on the north side of the tracks until they can safely cross to the south side at the Murray Street/Seabright Avenue intersection.
- There would be no direct street connections from the following streets on the north (inland) side of the tracks, thus reducing significant access from the neighborhoods: Cayuga Street, Mountain View Avenue, Watson Street, and Owens Street, Live Oak Avenue, and El Dorado Avenue, unless new rail crossings are approved by the CPUC.
- Between the San Lorenzo Trestle Bridge and the Santa Cruz Harbor, there is insufficient space to construct the trail on the coastal side and maintain the required 8.5–10 feet clearance from the tracks. Narrowing Murray Street and eliminating the bike lanes does not meet City Policy or standards. Further, locating the trail on the coastal side would preclude the addition of a dedicated right-turn lane on Murray Street, which is included as part of the Proposed Project for safety and to maintain traffic flow, and would further degrade operation of the Murray Street/Seabright Avenue intersection and impact all modes of travel through the intersection.
- Access to the existing West Harbor is on the north (inland) side of the existing rail. To access the trail from the south (coastal) side would require a new rail crossing.
- On the Harbor crossing, the new bicycle/pedestrian bridge (cantilever) cannot be located on the coastal side of the Woods Lagoon Railroad Bridge due to the proximity of the Murray Street Roadway Bridge. Additionally, the Murray Street Bridge will have additional utilities on the north side of the bridge, further constraining the available width for a trail on the coastal side of Woods Lagoon Railroad Bridge.
- Access to the East Harbor service road from Segment 9 would not be feasible from the coastal side without a new railroad crossing. The concept to include a path between the Woods Lagoon Railroad Bridge and Murray Bridge was evaluated a number of years ago and deemed infeasible due to sight distance issues at the connection and did not meet accessibility standards.
- East of the Santa Cruz Harbor (between the Harbor and 7th Avenue), the trail begins on the inland side for the reasons listed above. To align back to the south (coastal) side would require a new crossing. In addition, locating the trail on the coastal side would encroach on existing residences and require a transition back to the inland side at 7th Avenue where the trail is on the inland side.

Trail Only

Comments on the NOP include a suggestion to analyze the "Trail Only" alternative as described in Appendix B, Table B-13, of the Unified Corridor Investment Study (RTC 2019) in terms of width. The trail would be 26 feet wide in urban areas (including the Project corridor) and 16 feet wide in areas with grade constraints. The Trail Only option includes removal of the rail, construction of the trail on the rail line, and separating bicyclists from pedestrian using pavement markings where the trail is 16 feet or wider.

This Trail Only alternative differs from the Interim Trail, which is described above and included as an Optional First Phase of the Proposed Project, because it is wider (26 feet instead of 16 feet); it separates bicyclists from pedestrians with striping; and it does not include railbanking for future removal of the trail, rebuilding of the rail, and building the trail alongside the rail.

The City, in coordination with the County and RTC, decided to evaluate this alternative in this chapter (Section 5.2, *Alternatives Evaluated in Draft EIR*) because it was anticipated it could reduce at least one impact of the Ultimate Trail Configuration and of the optional first phase Interim Trail (e.g., less tree removal, earth movement and associated emissions). Additionally, it would provide for a broader range of reasonable alternatives to consider.

Interim Trail with Rail Preservation

The City considered an optional Interim Trail that includes rail preservation because the Santa Cruz Branch Rail Line is eligible for listing as a historic resource by California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP). Thus, rather than temporarily removing the rail tracks and ties to implement the optional Interim Trail, this alternative would include fiberglass reinforced polymer (FRP) decking that would be installed over the existing rail tracks and ties with the intention of preserving the rail. Similar to the optional Interim Trail described above, the Interim Trail with Rail Preservation includes three parts: (1) implementation of the Interim Trail, which includes installation of the FRP decking; (2) removal of the Interim Trail; and (3) construction of the Ultimate Trail Configuration alongside the rail.

This alternative that places FRP decking above the rail line, to preserve rather than remove the tracks and ties, is conceptual and would need to be more fully designed to confirm feasibility for the following reasons:

- Ballast removal to construct the retaining walls on each side of the rail could adversely affect the rail structural system during construction by destabilizing the track support.
- Diverting the trail (FRP decking) to the side of the railroad at-grade crossings requires supporting piles to transition down and then back up to the FRP trail, which could adversely affect the rail structural system.
- The FRP decking would not likely support emergency and maintenance vehicles (other than small a small all-terrain/maintenance vehicle), limiting the ability to respond to an emergency and maintenance on the trail.
- It is not certain that placing the FRP decking over the rails and ties would protect the historical integrity of the rail line, or that the rails and ties themselves represent the historical significance of the rail line. The RTC plans to further study the historical significance of the rail line.

Nonetheless, the City, in coordination with the County and RTC, decided to evaluate this alternative in this chapter (Section 5.2) because, if further study determines that the rails and ties are historically significant and that the FRP decking does not compromise the historical integrity, it would likely reduce at least one impact of the optional first phase Interim Trail (e.g., removal of the rail line eligible for listing as a historic resource). Additionally, it would provide for a broader range of reasonable alternatives to consider.

Summary of Alternatives Considered

Table 5-1 presents a summary of the alternatives considered for evaluation and either carried forward for evaluation in this chapter of the EIR or dismissed from further consideration. The table also includes the No Project alternative, as required by CEQA.

As stated in the beginning of this chapter, alternatives that do not avoid or substantially lessen at least one significant impact of the Proposed Project do not need to be analyzed in an EIR.

The alternatives considered were evaluated for their potential feasibility, their ability to achieve most of the Project objectives, and their ability to reduce Project impacts. In **Table 5-1**, the alternatives considered are separated into those that are evaluated in the Draft EIR (whether in Sections 3.1 through 3.14 at an equal level of detail as the Proposed Project, or within this chapter), and those that were considered but dismissed from further analysis for the reasons described above.

The following Project alternatives are analyzed in this chapter of the Draft EIR. The Interim Trail is an Optional First Phase of the Proposed Project and is evaluated in Chapter 3 of the Draft EIR.

1. Trail Only
2. Interim Trail with Rail Preservation
3. No Project Alternative

Table 5-2 lists the Project Objectives and identifies whether the Trail Only alternative meets most of the project objectives, in comparison to the Proposed Project. The No Project alternative is not included in **Table 5-2**.

Table 5-1 Summary of Alternatives Considered

Alternative	Feasible?	Meet Most of Basic Project Objectives? (see Table 5-2)	Reduce Significant Project Impacts?	Rationale for Alternatives Dismissed
Alternatives Evaluated in EIR				
Interim Trail (EIR Ch 3)	Yes	Yes	No[a, b]	
Trail Only (EIR Ch 5)	Yes	Yes	No[c, d]	
Interim Trail with Rail Preservation (EIR Ch 5)	Yes[e]	Yes	Yes	
No Project (EIR Ch 5)	Yes	No	Yes	
Alternatives Dismissed				
Inclusion of the San Lorenzo River Trestle Bridge	Yes	Yes	No	This portion of the Coastal Rail Trail is already constructed. Including this alternative or design option as part of the optional Interim Trail would not reduce the severity of any of the significant effects of the Proposed Project, and would result in additional construction-related impacts to the San Lorenzo River (designated critical habitat) and trail users by disrupting use of the existing bicycle/pedestrian path on the trestle bridge. Further, the trestle bridge is used for emergency staging by the Roaring Camp train.
Trail Next to Another Transit Option	Uncertain	Yes	No	This alternative to include another transit option is too speculative and not considered financially feasible, and this alternative would not likely reduce the severity of any of the significant effects of the Proposed Project.
Grade Separations at Roadway Crossings	No	Yes	No	This design feature would not likely reduce the severity of any of the significant effects of the Proposed Project, and this alternative would result in additional construction-related impacts and permanent visual impacts due to the size. Further, it is not considered feasible because the structure would need to be large enough to meet ADA requirements and bicycle access, which would not fit within the rail corridor.

Table 5-1 Summary of Alternatives Considered

Alternative	Feasible?	Meet Most of Basic Project Objectives? (see Table 5-2)	Reduce Significant Project Impacts?	Rationale for Alternatives Dismissed
Coastal Side (Maximize Coastal Access)	Partially	Yes	No	This alternative would result in a similar amount of tree removal as the Ultimate Trail Configuration, but would result in greater impact to sensitive habitat and native and significant trees along Twin Lakes State Beach. In the area near the Harbor where it could reduce impacts associated with tree removal near monarch roosting, it is not feasible to locate the trail on the coastal side because there is insufficient space between the Woods Lagoon Railroad Bridge and the Murray Street bridge to maintain the required 8.5–10 feet clearance from the tracks.

[a] Implementing the *Optional First Phase: Trail on the Rail Line (Interim Trail)* includes three parts: (1) removal of the rail and construction of the Interim Trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration, alongside the rail. When considering the whole of the Project, the impacts of the Interim Trail would include all those identified for the Ultimate Trail Configuration. Therefore, the Interim Trail would not reduce significant project impacts.

[b] As described in Chapter 3, Sections 3.1–3.14, and summarized in **Table ES-1**, most of the impacts of the optional Interim Trail would be similar to the Proposed Project (Ultimate Trail Configuration). However, for several environmental topics, the impacts would be greater because the rail line (historic resource eligible for listing) would be removed, and because of the two additional construction periods. Additionally, it results in slightly more tree removal, as shown in **Table 2-4** and described in Section 3.3, *Biological Resources*, because construction of the Interim Trail (Part 1) requires tree removal on the south side of the rail that would not be required for the Proposed Project (Ultimate Trail Configuration).

[c] The Trail Only alternative would require a similar and likely greater amount of tree removal than the Proposed Project, with or without the optional Interim Trail, and thus would not reduce impacts to aesthetics, biological resources, or land use (policy consistency). Although there would be a slight reduction in tree removal on the north side of the tracks, because Trail Only is so much wider, this alternative would require additional tree removal on the south side of the rail in environmentally sensitive habitat area (ESHA) that would not be required for the Proposed Project (Ultimate Trail Configuration) or for Part 1 of the Interim Trail. Therefore, there would be no overall reduction in biological resources impacts. Additionally, Trail Only would require greater earth movement than the Proposed Project (Ultimate Trail) and less earth movement than the optional Interim Trail (Parts 1, 2, 3), which includes two additional construction periods. Overall, Trail Only would not reduce significant impacts, and the aesthetics and biological resources impacts associated with tree removal would still be significant and unavoidable.

[d] The Trail Only alternative would not reduce cultural resources impacts because it would permanently remove the rail line, a historic resource; thus, the cultural resources impact would still be significant and unavoidable.

[e] Interim Trail with Rail Preservation appears feasible at the conceptual level, but it needs to be confirmed that the ballast removal to construct the retaining walls on each side of the rail, as well as the pilings to support the descent and ascent at road crossings, would not adversely affect the rail structural system.

Table 5-2 Project Objectives and Alternative Trail Alignments

Project Objective		Is the Trail Alignment Consistent with the Project Objective?			
		Proposed Project		Build Alternatives Evaluated	
		Ultimate Trail Configuration	Optional First Phase Interim Trail	Alternative 1 Trail Only	Alternative 2 Interim Trail with Rail Preservation
1	Provide a continuous public trail with continuity in design along the Santa Cruz Branch Line railroad corridor and connecting spur trails in Santa Cruz County (Master Plan Objective 1.1)	Yes	Yes	No[a]	No[g]
2	Develop the trail so future rail transportation service along the corridor is not precluded (Master Plan Policy 1.2.4)	Yes	Yes	No	Yes
3	Maximize ocean views and scenic coastal vistas along a coastal alignment for experiencing and interpreting the Monterey Bay National Marine Sanctuary, coastal environment, local history, and affected communities (Master Plan Policy 1.1.2 and 1.1.4, objective 2.1)	Yes	Yes	Yes	Yes
4	Maximize safety and serenity for experiencing and interpreting the sanctuary and landscapes by providing a trail separate from roadway vehicle traffic (Master Plan Goal 1)	Yes	Yes	Yes	Yes
5	Minimize trail impacts to private lands, including agricultural, residential, and other land uses (Master Plan Objective 1.5)	Yes	Yes	Yes	Yes
6	Minimize trail impacts to sensitive habitat areas and special-status plant and animal species (Master Plan objective 1.4, Policy 1.4.1)	Yes[b]	Yes[c]	No[d]	Yes[c]
7	Comply with requirements of local, state, and federal agencies with jurisdiction	Yes	No[e]	No[f]	Yes
Does it meet most of the basic project objectives)?		Yes	Yes	Yes	Yes

[a] The trail width would be 26 feet wide, and pedestrians and bicyclists would be separated using pavement markings, whereas the planned trail segments north (Segment 7) and south (Segments 10–12) would generally be 12 feet wide, which would be a lack of continuity in design for trail users. However, it is acknowledged that Segment 8 lacks continuity because it includes a bicycle cycle track and pedestrian sidewalks, rather than a Class I multipurpose trail, to use existing facilities for cost efficiency and to minimize potential environmental impacts.

[b] The Proposed Project (Ultimate Trail Configuration) was designed to minimize tree removal and impacts to sensitive habitat to the extent feasible, while still conforming to Caltrans Class 1 requirements for minimum trail width and CPUC requirements for distance from rail, by using a viaduct design in several locations which reduces ground disturbance and tree removal, compared to an at-grade trail with supporting retaining walls. Additionally, the Ultimate Trail Configuration is on the north (inland) side of the rail, away from sensitive habitat along Twin Lakes State Park on the south (coastal) side of the trail.

[c] The optional Interim Trail Part 1 (removal of tracks and construction of Interim Trail) and the Interim Trail with Rail Preservation would minimize impacts to sensitive habitat and result in less tree removal by aligning on the rail centerline, and Part 3 (Ultimate Trail

Table 5-2 Project Objectives and Alternative Trail Alignments

	Is the Trail Alignment Consistent with the Project Objective?			
	Proposed Project		Build Alternatives Evaluated	
Project Objective	Ultimate Trail Configuration	Optional First Phase Interim Trail	Alternative 1 Trail Only	Alternative 2 Interim Trail with Rail Preservation

Configuration) would minimize impacts as described above in footnote 2. However, the two additional construction periods would increase temporary impacts.

[d] Although the Trail Only alternative would reduce tree removal on the north side of the rail line, the substantially wider trail would extend south of the rail resulting in more tree removal and impacts to sensitive habitat along Twin Lakes State Beach.

[e] The optional Interim Trail would conflict with current City policies and goals in the 2030 General Plan including, but not limited to the following identified by City staff: CD 4.1.4 Protect and enhance historic street patterns, rail lines, walls; M 1.1.3 Implement pedestrian and bicycle improvements that support transit ridership; M 2.2.1 Protect existing and potential railroad lines and rights-of-way, and other potential rights-of-way, from land uses that would prevent the development of rail or fixed-guide way services or other transportation-related uses in the future; M 2.2.2 Encourage the continued transport of goods by rail. The Proposed Project, with and without the optional Interim Trail, would conflict with City and County policies regarding tree protection.

[f] The Trail Only alternative would conflict with current RTC policy to retain the tracks and construct a trail alongside them, as approved by the RTC with the adoption of the MBSST Network Master Plan in 2013. RTC staff determined that the optional first phase Interim Trail would not conflict with this RTC policy because the option for future rail transit options is retained through railbanking, which could occur if the common carrier files for abandonment of freight operations along the Santa Cruz Branch Rail Line with the Surface Transportation Board (STB), or if the RTC files for adverse abandonment.

[g] The Interim with Rail Preservation trail would be composed of fiberglass reinforced polymer (FRP) decking, whereas the planned trail segments north (Segment 7) and south (Segments 10–12) would be at-grade asphalt, which would be a lack of continuity in design for trail users. However, it is acknowledged that Segment 8 lacks continuity because it includes a bicycle cycle track and pedestrian sidewalks, rather than a Class I multipurpose trail, to use existing facilities for cost efficiency and to minimize potential environmental impacts.

5.2 Alternatives Evaluated in Draft EIR

This section presents the alternatives and includes an evaluation for the environmental topics addressed in Sections 3.1 to 3.14, although at a more general level to compare the merits of the alternatives to the Proposed Project, as allowed by CEQA (*CEQA Guidelines*, Section 15126.6[d]). **Table 5-3**, located at the end of this chapter, presents a list of all the potential impacts of the Proposed Project and a summary comparison for each of the alternatives. The text below is a summary discussion, focusing on the potentially significant impacts that require mitigation to reduce the impact to a less than significant level. **Table 5-4**, also located at the end of this chapter, presents a list of the required mitigation measures for the Proposed Project and each alternative.

Interim Trail

Description

As stated above, an Interim Trail is an Optional First Phase of the Proposed Project (as opposed to a separate stand-alone alternative) called *Optional First Phase: Trail on the Rail line (Interim Trail)*.

Under this Optional First Phase, all or a portion of the trail in Segment 9 would be constructed in approximately the same location of the railroad tracks by removal of the rails and ties, and road crossings. If and when freight rail service is re-activated, the Interim Trail would be removed and the rail reinstated; and the Ultimate Trail Configuration would be constructed. Therefore, implementation of the Interim Trail includes three parts: (1) removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration, alongside the rail.

The typical width of the paved trail would be 16 feet with striping in the middle to separate eastbound and westbound. The width could narrow to between 12–16 feet at roadway crossings, the Harbor crossing, and Leona Creek crossing. The typical width of the Ultimate Trail Configuration would be 12 feet and could narrow to between 9.5–12 feet at water crossings and constrained areas. The Interim Trail is described in greater detail in Section 2.4.1, and the alignment is presented in **Appendix A.2**.

Impact Analysis

The Interim Trail is evaluated in Chapter 3, with an equal level of detail as the Ultimate Trail Configuration. **Table 5-3**, as well as **Table ES-2** in the *Executive Summary*, includes a summary of the impacts compared to the Proposed Project.

Alternative 1 (Trail Only)

Description

Under Alternative 1, the railroad tracks and ties would be permanently removed, and the multi-use trail would be constructed in generally the same location in Segment 9. The description below is based on the Unified Corridor Investment Study, Appendix B, Table B-13 (RTC 2019). Segment 8 would be the same as the Proposed Project, with or without the optional Interim Trail; therefore, the analysis in this section is focused on and applicable to Segment 9.

The typical trail width would generally be 26 feet in urban areas (which includes the Project corridor by definition), 16 feet in areas with grade constraints (such as Leona Creek and Stream 1454 embankments), and 12 feet over the Woods Lagoon Railroad Bridge. Bicyclists and pedestrians would be separated with pavement markings where the trail is 16 feet or wider. All trail widths referenced include 2-foot buffers that could be paved or unpaved. Other than trail width and separation of bicyclists and pedestrians, the Alternative 1 trail characteristics (trail alignment, materials, features) would be similar to those described in Section 2.4.2 for the optional Interim Trail.

As described in Section 2.6.2 for the optional Interim Trail, removing the railroad tracks would follow the required Surface Transportation Board requirements for abandonment, railbanking, and track removal.[1] After the required administrative tasks, the physical elements of track removal would entail: 1) Remove rail, ties, signage, and equipment. 2) Excavate and redistribute ballast on site where feasible. 3) Regrade, add base rock, compact, and then pave the trail with asphalt.

The 26-foot-wide trail would be substantially wider than the Proposed Project. Compared to the Ultimate Trail Configuration (generally 12 feet wide), Alternative 1 (Trail Only) would be 14 feet wider (more than double the width). On the north side of the rail, Alternative 1 would extend 13 feet from the centerline, which is 10 feet less to the north than the Ultimate Trail Configuration. On the south side of the rail, Alternative 1 would extend 13 feet from the centerline, which is 13 feet more than the Ultimate Trail Configuration, because the Ultimate Trail Configuration would be entirely on the north side (except at the east end of the alignment where it crosses to the south side). Compared to Part 1 of the Interim Trail (rail removal and construction of a 16-foot-wide Interim Trail), Alternative 1 (Trail Only) would be 10 feet wider, with 5 feet more on both the north and south sides of the rail.

[1] Title 49, Subtitle B, Chapter X, Subchapter B, Part 1152 – Abandonment and Discontinuance of Rail Lines and Rail Transportation Under 49 U.S.C. 10903.

Alternative 1 (Trail Only) would require some retaining walls, less than the Ultimate Trail Configuration but more than the Interim Trail (Part 1), both of which are described in Section 2.4.

Alternative 1 would require tree removal to accommodate the 26-foot-wide trail. Compared to the Ultimate Trail Configuration, there would be slightly less tree removal on the north side of the rail line but substantially more on the south side. Compared to Part 1 of the Interim Trail, there would be more tree removal on both sides of the rail line.

Impact Analysis

The impact analysis presented below and in **Table 5-3** focuses on the environmental impacts of implementing Alternative 1 (Trail Only) in comparison to the Proposed Project.

Construction of the wider trail would result in a larger area of ground disturbance (excavation, earthwork, materials) than the Proposed Project, with or without the optional Interim Trail. However, implementation of the optional Interim Trail as a whole (including all three parts) includes two additional construction phases and thus more construction-related effects than Alternative 1.

Alternative 1 would not reduce any of the significance determinations for the Proposed Project, with or without the optional Interim Trail, including any potentially significant impacts to a less than significant level. There would still be significant and unavoidable impacts to aesthetics and biological resources from tree removal, which is the same as the Proposed Project with or without the optional Interim Trail. There would still be significant and unavoidable impacts to cultural resources from removal of the historic rail line, which is the same as the Proposed Project with the optional Interim Trail.

AESTHETICS

The aesthetic impacts of Alternative 1 (Trail Only) would be similar to the Proposed Project, which is addressed in Section 3.1, *Aesthetics*. The overall impact determination would be significant and unavoidable due to tree removal, which is the same as the Proposed Project, with and without the optional Interim Trail.

The Alternative 1 trail characteristics would differ in that the trail would be wider (generally 26 feet instead of 12 feet for the Ultimate Trail Configuration and 16 feet for Part 1 of the optional Interim Trail); and there would be no rail and thus no potential fencing between the rail and trail, although there could be fencing/guardrails near slopes as needed for safety.

Alternative 1 would have a similar impact on scenic vistas and public views due to tree removal. The 26-foot-wide trail centered on the rail line would have a larger footprint and thus similar tree removal as the Ultimate Trail Configuration located along the north side of the rail, between the SLR Trestle Bridge and El Dorado Avenue. Although the 26-foot-wide trail would require less tree removal on the north side of the rail, it would require more tree removal on the south side of the trail, including trees contributing to the scenic quality in Twin Lakes State Beach and other visible locations along the rail corridor, that would not be required for the Ultimate Trail Configuration, increasing this impact. The impact to scenic vistas and public reviews would be significant and unavoidable.

Like the Proposed Project, the Alternative 1 trail alignment would not be visible from SR-1; therefore, impacts regarding scenic resources associated with a state scenic highway would be less than significant.

Alternative 1 would not adversely affect daytime or nighttime views through creation of a new source of substantial light and glare. Construction would occur during the daytime, and trail lighting

would be low-level and directed down toward the trail, in compliance with applicable SCMC and SCCMC lighting regulations. Similar to the Proposed Project, the potential light and glare impact would be less than significant.

The overall aesthetics impact of Alternative 1 would be **significant and unavoidable** due to tree removal, which is the same as the Proposed Project, with and without the optional Interim Trail.

AIR QUALITY

The air quality impacts of Alternative 1 (Trail Only) would be similar to the Proposed Project, which are addressed in Section 3.2, *Air Quality*. The overall impact determination would be less than significant, like the Proposed Project with or without the optional Interim Trail.

Like the Proposed Project, Alternative 1 would generate construction-related emissions of PM_{10} and other criteria pollutants during construction. The impact would be similar to, but slightly greater than the Proposed Project (Ultimate Trail Configuration) because the 26-foot-wide trail centered on the rail line would have a larger disturbance footprint and associated construction emissions than the 12-foot-wide trail alongside the rail line. Compared to the optional Interim Trail, the impact would be similar to but slightly greater than the emissions quantified for Part 1 of the optional Interim Trail. Although both include rail demolition, Alternative 1 would require more ground disturbance than Interim Trail (Part 1) because the trail would be 26 feet wide instead of 16 feet wide. However, Alternative 1 would have less construction-related emissions overall when considering the whole of the Interim Trail (Parts 1, 2, 3). Overall, Alternative 1 would result in similar ground disturbance and associated construction-related emissions, and the impact would be less than significant.

Once constructed, operational emissions would be the same as the Proposed Project, with or without the optional Interim Trail**,** because function of the trail would be similar, including the net air quality beneficial effect by providing alternative transportation corridor for bicyclists, pedestrians, and other users, which is expected to reduce vehicular travel and associated emissions.

The overall air quality impacts of Alternative 1 would be less than significant, which is the same as the Proposed Project, with or without the optional Interim Trail.

BIOLOGICAL RESOURCES

The impacts to biological resources from Alternative 1 (Trail Only) would be substantially similar, but slightly greater than, the Proposed Project (Ultimate Trail Configuration), and substantially similar to the optional Interim Trail, which are described in Section 3.3, *Biological Resources*. The overall impact determination for Alternative 1, would be **significant and unavoidable,** like the Proposed Project (Ultimate Trail) with or without the optional Interim Trail.

Alternative 1 would require the removal of the tracks and construction of the 26-foot-wide multi-use trail generally centered on the existing tracks. The multi-use trail would be 14 feet wider than the 12-foot-wide Proposed Project (Ultimate Trail Configuration) and extend south of the existing rail line, whereas the Proposed Project (Ultimate Trail Configuration) would be confined to the north side of the corridor. Therefore, impacts associated with this alternative would extend south of the rail line compared to the Proposed Project (Ultimate Trail Configuration) and would be greater overall because of the wider footprint. Both the optional Interim Trail and the Alternative 1 multi-use trail would be centered on the existing rail line; however, the Alternative 1 trail would be 10 feet wider than the 16-foot-wide optional Interim Trail, and extend further on the south side of the existing rail. Thus, the permanent impacts of Alternative 1 would extend 5 feet further to the south

and north when compared to the optional Interim Trail Part 1. Temporary impacts associated with the two trails would be similar.

Removal of the tracks for Alternative 1 would result in elevated noise, fugitive dust, debris, and potentially hazardous materials. Thus, these impacts would be greater than the Proposed Project (Ultimate Trail Configuration), which would not require removal of the tracks, and would be similar to the optional Interim Trail (Part 1), which would also require removal of the tracks. The optional Interim Trail would require two additional construction periods in order to complete Parts 1, 2, and 3. Therefore, Alternative 1 would have fewer construction-related impacts than the optional Interim Trail.

The main impacts associated with Alternative 1 would be substantially similar to those identified for the Proposed Project, with or without the optional Interim Trail, including the removal of mature trees and impacts to sensitive habitats, as well as associated special-status plant and wildlife species. Compared to the Proposed Project (Ultimate Trail Configuration), the Alternative 1 impacts to biological resources are as follows:

- Potentially greater indirect impacts to the Santa Cruz tarplant because of the displacement of ESHA further south toward (closer to) coastal terrace prairie in the Twin Lakes State Beach open space, as a result of the wider trail. No fencing is proposed for Alternative 1, whereas, for the Ultimate Trail, protective fencing may be constructed between the trail and the rail corridor, as a safety measure.
- Slightly greater impacts to known and potential monarch roost habitat; breeding birds, including bald eagle, peregrine falcon, and other sensitive and common nesting bird species; roosting bats, including the sensitive western red bat; and the San Francisco dusky-footed woodrat due to the greater project footprint, additional tree removal, greater disturbance of understory vegetation, and wider trail.
- Similar impacts to federally-listed fish species, western pond turtle, Santa Cruz black salamander, and marine mammal species.
- Slightly greater impacts to sensitive habitats including coast live oak woodland, arroyo willow riparian, and mixed riparian habitats because of the wider footprint, wider trail, and displacement of these habitats both north and south of the rail line.
- Slightly greater impacts to the ditch wetland located at the west end of Segment 9.
- Slightly greater impacts to wildlife movement because of the larger footprint, additional tree removal, greater disturbance of understory vegetation, and wider trail.
- Slightly greater impacts associated with tree removal and removal of native, significant and heritage trees because of the larger footprint, additional tree removal, disturbance of understory vegetation, and wider trail.

The overall impacts to biological resources from impact of Alternative 1 would be **significant and unavoidable**, which is the same as the Proposed Project with or without the optional Interim Trail.

CULTURAL RESOURCES

The cultural resources impact of Alternative 1 (Trail Only) would be substantially greater than the Proposed Project (Ultimate Trail Configuration) and similar to the optional Interim Trail, which are addressed in Section 3.4, *Cultural Resources.* The overall impact determination for Alternative 1, as well as the optional Interim Trail, would be significant and unavoidable due to the removal of the Santa Cruz Branch Rail Line, compared to less than significant for the Proposed Project (Ultimate Trail Configuration), without the optional Interim Trail.

Alternative 1 would remove the railroad tracks, and the multi-use trail would be constructed in generally the same location. This would adversely affect a known historical resource as this alternative would remove the Santa Cruz Rail Line. Like the optional Interim Trail, the impact to historical resources would be significant and unavoidable.

Alternative 1 would require more ground-disturbing work compared to the Proposed Project (Ultimate Trail Configuration), because the trail would be 26 feet wide instead of 12 feet wide. Therefore, Alternative 1 would have a greater likelihood of encountering undiscovered historical, archaeological, or human remains. However, the impact would be reduced to a less than significant level with the same mitigation required for the Proposed Project (Ultimate Trail Configuration). When compared to the optional Interim Trail, the impact of Alternative 1 would be similar to or less than full implementation of the optional Interim Trail which has three separate construction periods that increases the risk for encountering cultural resources, albeit potentially decades apart.

The overall cultural resources impact of Alternative 1 would be **significant and unavoidable** due to the removal of the Santa Cruz Rail Line, which would be greater than the Proposed Project, without the optional Interim Trail (less than significant with mitigation), and similar to the Proposed Project, with the optional Interim Trail (significant and unavoidable).

GEOLOGY AND SOILS

The geology and soils impact of Alternative 1 (Trail Only) would be similar to those identified for the Proposed Project, which are addressed in Section 3.5, *Geology and Soils*. The overall impact determination would be less than significant with mitigation, like the Proposed Project with or without the optional Interim Trail.

The Alternative 1 alignment extends through the same geology and soils as the Proposed Project. Thus, like the Proposed Project, Alternative 1 could expose the trail and trail users to risk of injury from liquefaction or landslides, could result in substantial soil erosion or loss of topsoil, and could result in risk to life and property from expansive soils.

The impact associated with soil erosion and loss of topsoil from Alternative 1 would be slightly greater than the Proposed Project (Ultimate Trail Configuration), due to the demolition phase required to remove the existing rail line and the increased excavation, earthwork, and materials to construct a wider trail (26 feet wide compared to 12 feet wide). Accordingly, these impacts from Alternative 1 would be similar to the optional Interim Trail Part 1, which also requires rail removal and construction of a 16-foot-wide trail, but less than the Interim Trail when considering the combined construction-related effects of Parts 1, 2 and 3.

With implementation of recommendations from the Geotechnical Investigation Reports, the impacts related to risk from unstable soils would be less than significant for Alternative 1, as well as the Proposed Project with or without the optional Interim Trail, as described in Section 3.5, *Geology and Soils*.

Similar to the Proposed Project, Alternative 1 would involve ground-disturbing activities that may directly or indirectly destroy a unique paleontological resource, site, or unique geologic feature. Alternative 1 would have a larger construction footprint because the trail would be wider (26 feet wide instead of 12 feet wide), but the Proposed Project (Ultimate Trail Configuration) includes retaining walls requiring deeper excavation. Compared to the optional Interim Trail, Alternative 1 would have a greater impact than Part 1 of the Interim Trail because of the wider trail (26 feet instead of 16 feet), but less impact when considering the combined construction-related effects of Parts 1, 2 and 3. With implementation of mitigation requiring paleontological resource monitoring

and reporting during project construction, this impact would be less than significant with mitigation for Alternative 1, as well as the Proposed Project with or without the optional Interim Trail.

The overall geology and soils impacts of Alternative 1 would be **less than significant with mitigation**, which is the same as the Proposed Project, with or without the optional Interim Trail.

GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

The GHG emissions/climate change impacts of Alternative 1 (Trail Only) would be substantially similar to those identified for the Proposed Project (Ultimate Trail Configuration), which are addressed in Section 3.6, *Greenhouse Gas Emissions/Climate Change*. The overall impact determination would be less than significant, like the Proposed Project with or without the optional Interim Trail.

Like the Proposed Project, Alternative 1 would generate GHG emissions during construction from earth moving equipment and truck trips to haul soil. The impact would be similar to but slightly greater than the Proposed Project (Ultimate Trail Configuration) because the 26-foot-wide trail centered on the rail line would require a similar amount of construction activity and associated emissions as the 12-foot-wide trail alongside the rail line, but also requires demolishing the existing rail and associates haul trips. Compared to the optional Interim Trail, the impact would be similar to Part 1 of the optional Interim Trail, which also results in truck trips from the demolition of the rail line. However, Alternative 1 would have less construction-related GHG emissions overall when considering the whole of the Interim Trail (Parts 1, 2, 3). Overall, Alternative 1 would result in similar ground disturbance and associated construction-related GHG emissions, and the impact would be less than significant.

Once constructed, the operational GHG emissions from Alternative 1 would be the same as the Proposed Project, with or without the optional Interim Trail. Although Alternative 1 and the Proposed Project would also result in tree removal and minimal new lighting and solid waste disposal, they would provide a new alternative transportation (bicycle and pedestrian) connection and route that would result in a net GHG benefit to the region, which supports implementation of regional and state GHG reduction plans.

The overall GHG emissions/climate change impacts of Alternative 1 would be less than significant, which is the same as the Proposed Project, with or without the optional Interim Trail.

HAZARDS AND HAZARDOUS MATERIALS

The hazards and hazardous materials impacts of Alternative 1 would be greater than those identified for the Proposed Project (Ultimate Trail Configuration), which is addressed in Section 3.7, *Hazards and Hazardous Materials*. However, the overall impact determination for Alternative 1 would be less than significant with mitigation, like the Proposed Project with or without the optional Interim Trail.

Similar to the Proposed Project with or without the optional Interim Trail, Alternative 1 could disturb contaminated soil during construction, because the Project corridor is within 140 feet of two identified hazardous materials sites (the Boardwalk Entry 2 and Ledyard). This impact would be reduced to less than significant with mitigation requiring soil sampling prior to construction, a program to remediate or manage known contaminated soil during construction, and a Soils Management Plan developed by a qualified engineer to include measures to avoid exposure to contaminants.

Additionally, and similar to the Proposed Project with the optional Interim Trail, Alternative 1 would entail removal of the Santa Cruz Branch Rail Line as well as associated structures and equipment (i.e., crossing gates, switch boxes). Removal of the rail could result in potential exposure to contaminants still present on the track ballast and rail ties, resulting in health hazards to construction workers or attendees at the nearby Shoreline Middle School. Therefore, impacts would be greater than the Proposed Project (Ultimate Trail Configuration). This impact would be less than significant with compliance with existing hazardous material regulations and with mitigation requiring an evaluation of the subgrade soil within the corridor and capping contaminated soils and ballast.

The overall hazards and hazardous materials impacts of Alternative 1 would be **less than significant with mitigation,** which is the same as the Proposed Project, with or without the optional Interim Trail. However, Alternative 1 and the optional Interim Trail require additional mitigation associated with removal of the rail line.

HYDROLOGY AND WATER QUALITY

The hydrology and water quality impacts of Alternative 1 (Trail Only) would be similar to but somewhat greater than, those identified for the Proposed Project, which are described in Section 3.8, *Hydrology and Water Quality*. The overall impact determination would be less than significant, like the Proposed Project with and without the optional Interim Trail.

Like the Proposed Project, Alternative 1 could violate water quality standards, alter drainage patterns in the rail corridor through the introduction of new impervious surfaces, and place structures in a 100-year flood hazard area. The impacts of Alternative 1 would be greater than the Proposed Project (Ultimate Trail Configuration) because Alternate 1 would require substantially more material movement from demolishing the existing rail and constructing a trail that is twice as wide (26 feet compared to 12 feet). Additionally, the wider trail would result in twice as much new impervious surface compared to the Proposed Project, which would have slightly greater impacts with respect to interference with groundwater recharge. However, the impacts of Alternative 1 would be similar to or less than the Proposed Project with the optional Interim Trail, which includes three construction periods instead of one. Under all scenarios, the impact would be reduced to less than significant through implementation of the pre and post construction best management practices, compliance with the NPDES-required SWPPP and the City of Santa Cruz Grading Ordinance, and incorporation of drainage features into project design.

The overall hydrology and water quality impact of Alternative 1 would be less than significant, which is the same as the Proposed Project, with and without the optional Interim Trail.

LAND USE AND PLANNING

The land use and planning impacts of Alternative 1 (Trail Only) would be similar to but slightly greater than those identified for the Proposed Project, which is addressed in Section 3.9, *Land Use and Planning*. The overall impact determination would be less than significant, like the Proposed Project with or without the optional Interim Trail.

Like the Proposed Project, Alternative 1 would be along the rail corridor and would not physically divide an established community; rather, the trail would increase connectivity within the community. Like the Proposed Project, Alternative 1 would be consistent with most (30 of 31) of the applicable City and County land use policies, as described in Section 3.9. The Proposed Project and Alternative 1 would both be inconsistent with Policy 5.1.6, Development in Sensitive Habitats, of the County's General Plan. The evaluation in Section 3.9 considered policies of the City of Santa Cruz

General Plan, the County of Santa Cruz General Plan, Twin Lakes State Beach General Plan, the Santa Cruz County Bicycle Plan, and MBSST Master Plan. City and County ordinances and policies associated with tree removal are addressed in the Biological Resources discussion.

Unlike the Proposed Project, Alternative 1 would not be consistent with Policy 1.2.4 of the MBSST Network Master Plan, which intends to develop trails in a way that does not preclude future rail service along the rail corridor, because Alternative 1 would permanently remove the rail. Because Alternative 1 would be consistent with most of the applicable City and County land use policies, this impact is considered less than significant.

The overall land use and planning impact of Alternative 1 would be **less than significant**, which is the same as the Proposed Project, with or without the optional Interim Trail.

NOISE

The noise impacts of Alternative 1 (Trail Only) would be similar to but greater than those identified for the Proposed Project, which are addressed in Section 3.10, *Noise*. The overall impact determination would be less than significant with mitigation, like the Proposed Project with or without the optional Interim Trail.

Like the Proposed Project, construction of the Alternative 1 alignment could result in a substantial temporary increase in noise levels and expose persons to groundborne vibration and noise. This impact would be similar to, but greater than the Proposed Project (Ultimate Configuration) because there would be more ground disturbance associated with demolishing the rail (also required for Part 1 of the optional Interim Trail) and constructing the 26-foot-trail, which is over twice the width and extends closer to sensitive receptors (residences) on the south side of the rail, particularly between the Santa Cruz Harbor on the west and 7th Avenue and the Harbor Beach Court residences on the east. The optional Interim Trail would have more construction-related noise impacts associated with the two additional construction phases that are required for Part 2 (demolishing the Interim Trail and rebuilding the rail line) and Part 3 (constructing the Ultimate Trail Configuration). Under all scenarios, the construction impacts would be reduced to a less than significant level by requiring mitigation that implements noise-reducing measures near sensitive receptors and providing notification of construction vibration.

The overall noise impacts of Alternative 1 would be less than significant with mitigation, which is the same as the Proposed Project, with or without the optional Interim Trail.

PUBLIC SAFETY AND SERVICES

The public safety and service impacts of Alternative 1 (Trail Only) would be similar to those identified for the Proposed Project, which are addressed in Section 3.11, *Public Safety and Services*. The overall impact determination would be less than significant, like the Proposed Project with or without the optional Interim Trail.

Like the Proposed Project, Alternative 1 would likely have a similar number of trail users, perhaps more given the wider trail, which could increase use of existing and new recreational facilities in the Santa Cruz area, but would not likely result in the need for additional emergency response, fire or police protection, or other public services to maintain acceptable service ratios or response times. However, since the Santa Cruz Branch Rail Line would be removed under this alternative and the trail would be 26 feet wide, emergency access to the trail would be easier because the trail would be much wider, and emergency vehicles would not need to cross the rail tracks to access the trail.

The overall public safety and services impacts of Alternative 1 would be **less than significant**, like the Proposed Project with or without the optional Interim Trail.

TRANSPORTATION

The transportation impacts of Alternative 1 (Trail Only) would be similar to those identified for the Proposed Project, which are addressed in Section 3.12, *Transportation*. The overall impact determination would be less than significant, like the Proposed Project with or without the optional Interim Trail.

Like the Proposed Project (Ultimate Trail Configuration), transportation impacts during construction of Alternative 1 would be primarily associated with the presence of large construction equipment and vehicles accessing the Project corridor. The impacts of Alternative 1 would be somewhat greater than the Proposed Project (Ultimate Trail Configuration) because Alternative 1 would require additional hauling trips and more construction-related traffic associated with the demolition of the existing rail and construction of a wider trail. However, the impacts of Alternative 1 would be similar to or less than the Proposed Project with the optional Interim Trail, which would also require additional hauling trips and more construction-related traffic associated with demolition of the existing rail (Part 1), the Interim Trail (Part 2), and three construction periods instead of one.

Similar to the Proposed Project with or without the optional Interim Trail, Alternative 1 would ultimately be consistent with the vehicle miles traveled (VMT) screening criteria set forth by the Office of Planning and Research (OPR), Caltrans, City, and County. Specifically, Alternative 1 would be consistent with the OPR small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with AMBAG's Sustainable Communities Strategy (SCS), and would satisfy the conditions of several OPR example projects that do not require induced demand analysis. As such, impacts related to VMT would be less than significant.

Like the Proposed Project, construction of Alternative 1 could introduce temporary hazards due to the potential for conflict between construction vehicles and existing traffic. This impact would be somewhat greater than the Proposed Project without the optional Interim Trail, because there would be additional construction traffic associated with demolition of the rail line; and it would be less than the Proposed Project with the Interim Trail, which would have two additional construction phases. Under all scenarios, construction signage and a flagger would be present as needed to maintain public safety while facilitating construction access to the Project corridor.

Operation of Alternative 1 could affect vehicular, bicycle, and pedestrian safety at roadway crossings. This impact would also be similar to the Proposed Project, with or without the optional Interim Trail. Under all scenarios, implementation of the Project's safety design features would reduce the potential for hazards during operation to a less than significant level.

The overall transportation impact of Alternative 1 would be **less than significant**, which is the same as the Proposed Project, with or without the optional Interim Trail.

TRIBAL CULTURAL RESOURCES

The tribal cultural resources impact of Alternative 1 (Trail Only) would be similar to but greater than the Proposed Project, which is addressed in Section 3.13, *Tribal Cultural Resources*. The overall impact would be less than significant with mitigation, like the Proposed Project with or without the optional Interim Trail.

Alternative 1 would require increased ground-disturbing work compared to the Proposed Project due to the increased trail width (26 feet wide instead of 12 feet wide for the Ultimate Trail Configuration and 16 feet wide for the optional Interim Trail Part 1) and, therefore, would have a greater likelihood of encountering unknown tribal cultural resources. However, this impact would be less than the Proposed Project with full implementation of the optional Interim Trail (Parts 1, 2, 3) which has two additional construction periods. Under all scenarios, the impact would be reduced to a less than significant level with mitigation requiring a Native American monitor to be present during construction and preparation of a mitigation plan if tribal cultural resources are identified. When compared to the optional Interim Trail, the impact of Alternative 1 would be slightly less because there would be one construction phase (instead of three construction phases, albeit potentially decades apart), resulting in overall less risk of discovery.

The overall tribal cultural resources impact of Alternative 1 would be **less than significant** with mitigation, which is the same as the Proposed Project, with or without the optional Interim Trail.

UTILITIES AND SERVICE SYSTEMS

The utilities and service systems impacts of Alternative 1 (Trail Only) would be similar to but greater than those identified for the Proposed Project (Ultimate Trail Configuration), which are addressed in Section 3.14, *Utilities and Service Systems*.

The wider trail associated with Alternative 1 would have a larger construction footprint and require rail demolition, which would require more water for dust suppression and generate more solid waste compared to the Proposed Project (Ultimate Configuration), but less respectively for the optional Interim Trail which would have two additional construction periods and more demolition activities, including rail demolition (Part 1) and Interim Trail demolition (Part 2). The overall impact determination would be less than significant, like the Proposed Project with or without the optional Interim Trail.

Water. Alternative 1 would include a wider trail (26 feet wide compared to 12 feet wide for the Ultimate Trail Configuration), which would have a larger construction footprint and thus require more water usage for dust suppression and revegetation of disturbed areas compared to the Proposed Project. Compared to the optional Interim Trail, Alternative 1 could require more water for dust suppression during Part 1 (removal of rail line and construction of Interim Trail), but would require less water overall for dust suppression because there is only one construction phase instead of three construction phases. Like the Proposed Project with or without the optional Interim Trail, Alternative 1 would not result in a permanent demand for water or result in the relocation or construction of new or expanded water infrastructure. The impact to water would be less than significant.

Wastewater. Like the Proposed Project with or without the optional Interim Trail, Alternative 1 would not generate wastewater in excess of existing capacity or result in the relocation or construction of new or expanded wastewater infrastructure. The impact would be less than significant.

Stormwater. Like the Proposed Project, Alternative 1 would be subject to the requirements of the Construction General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, which would ensure that construction of Alternative 1 would not require the relocation or construction of new or expanded stormwater drainage facilities. Similar to the Proposed Project, Alternative 1 would be designed to include stormwater drainage design features that would be adequate for future drainage conditions, ensuring that operation of Alternative 1 would not require the additional relocation or construction of stormwater drainage facilities. Therefore, impacts related to stormwater drainage would be less than significant.

Electricity/Natural Gas, Telecommunications. For construction, Alternative 1 would require slightly more power or energy to operate tools associated with rail demolition, as well as the substantially wider trail, compared to the Proposed Project without the optional Interim Trail, but less compared to the Proposed Project with the Interim Trail because it has two additional construction periods.

For operation, Alternative 1 would result in similar electricity requirements for new lighting, traffic signal poles, and rectangular rapid-flashing beacons as the Proposed Project with or without the optional Interim Trail. Like the Proposed Project, such additions would be installed and operated with extensions from the existing electric system. Neither construction nor operation of Alternative 1 would involve any components requiring telecommunications infrastructure or natural gas. Therefore, Alternative 1 would not involve the relocation of existing electricity, natural gas, or telecommunications facilities. The impacts would be less than significant.

Solid Waste. Construction of Alternative 1 would require rail demolition which would generate more construction waste than the Proposed Project (Ultimate Trail Configuration), but less than the optional Interim Trail which would generate construction waste from three phases of construction, two of which involve demolition activities (Part 1 for rail removal, and Part 2 for Interim Trail removal), instead of one phase. Operation of Alternative 1 would generate a similar amount of solid waste as the Proposed Project with or without the optional Interim Trail. Neither would result in an increase in permanent population. Any waste generated along the trail from trail use would not be considered new waste added to the waste stream. Solid waste generated from construction and operation could be accommodated at the City of Santa Cruz's RRF landfill and the County's Buena Vista Landfill.

The overall utilities and service system impacts of Alternative 1 would be **less than significant**, which is the same as the Proposed Project with or without the optional Interim Trail.

Alternative 2 (Interim Trail with Rail Preservation)

Description

Under Alternative 2, the *Optional First Phase: Trail on the Rail line (Interim Trail)* for Segment 9 would include constructing the multi-use trail with fiberglass reinforced polymer (FRP) decking that would be installed over the existing rail tracks and ties, rather than removing the tracks and ties, to preserve the rail. Segment 8 would be the same as the Proposed Project; therefore, the analysis in this section is focused on and applicable to Segment 9.

The typical width of the FRP trail would be 16 feet wide with striping in the middle to separate eastbound and westbound. The width could narrow to between 12 and 16 feet at roadway crossings, the Harbor crossing, and Leona Creek crossing.

The FRP trail would be structurally supported under the panels and on the edges by low retaining walls, offset a minimum of 6–8 feet from the track centerline and running parallel to the rails. The retaining walls would require excavation 2–3 feet deep and would extend 1–2 feet above the rail so the RFP decking clears the rail tracks. To construct the low retaining walls, a small amount of ballast would need to be removed on each side of the rail. When edge conditions or right-of-way do not allow for an edge slope, safety railing would be installed to address any grade differential.

At roadway crossings, the FRP decking would extend or curve off the railbed and descend for the at-grade roadway crossing, and then ascend and curve back above the railbed. At the Santa Cruz Harbor crossing, the FRP decking would continue over the rail on the Woods Lagoon Railroad Bridge.

If and when freight rail service is re-activated, the Interim Trail would be removed; and the Ultimate Trail Configuration would be constructed. When the Interim Trail is removed, the FRP decking would be removed, and the retaining walls would be reduced in height to at-grade level, so they continue to support the ballast and tracks which could be structurally compromised if the retaining walls are removed entirely. The Ultimate Trail Configuration would be constructed as described in Sections 2.4.1 and 2.6.1. The typical width of the paved at-grade Ultimate Trail Configuration would be 12 feet and could narrow to between 9.5–12 feet at water crossings and constrained areas.

Thus, the Interim Trail with Rail Preservation includes three parts: (1) implementation of the Interim Trail, which includes installation of the FRP decking and supporting retaining walls; (2) removal of the Interim Trail FRP decking and reducing the height of the retaining walls to grade level; and (3) construction of the Ultimate Trail Configuration alongside the rail.

Impact Analysis

The impact analysis presented below and in **Table 5-3** focuses on the environmental impacts of implementing Alternative 2 (Interim Trail with Rail Preservation), whereby FRP decking would be installed over the tracks and ties, in comparison to the Proposed Project with the optional Interim Trail whereby the tracks and ties would be removed. Because this is an alternative specific to the optional Interim Trail, the discussions below do not compare Alternative 2 to the Proposed Project (Ultimate Trail Configuration) without the optional Interim Trail.

Construction of the Interim Trail on RFP decking over the tracks and ties would result in less ground disturbance than removing the tracks and ties and installing the paved trail in generally the same location. Although the construction footprint would be similar because the retaining walls to support the RFP decking would be offset a minimum of 6–8 feet from the rail centerline and running parallel to the rails, there would be substantially less earth movement and excavation to install the retaining walls than there would be to remove the tracks and ties.

Alternative 2 would reduce impacts associated with demolition and earth movement, although most of the significance determinations would be the same as the Proposed Project with the optional Interim Trail. However, Alternative 2 would likely reduce the cultural resources impact from significant and unavoidable to less than significant with mitigation, because the historic rail line would be preserved rather than demolished. There would still be significant and unavoidable impacts to aesthetics and biological resources from tree removal, which is the same as the Proposed Project with the optional Interim Trail.

AESTHETICS

The aesthetic impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to the Proposed Project with the optional Interim Trail. The overall impact determination would be significant and unavoidable due to tree removal, which is the same as the Proposed Project with the Interim Trail.

Under Alternative 2, the trail characteristics would generally be similar in that the Interim Trail with Rail Preservation would be the same width (16 feet) as the Proposed Project with Interim Trail and could have fencing/guardrails near slopes as needed for safety.

Alternative 2 would have a similar impact on scenic vistas and public views due to tree removal. The 16-foot-wide trail centered above the rail line would have the same footprint as the Proposed Project with Interim Trail and would therefore require similar tree removal. The trail under Alternative 2 would be constructed at a higher elevation than under the Proposed Project with

Interim Trail, due to the retaining walls and FRP deck. However, the slightly higher elevation of the trail under Alternative 2 would not block views of the Project corridor. The impact to scenic vistas and public reviews would be significant and unavoidable.

Like the Proposed Project with Interim Trail, the Alternative 2 trail alignment would not be visible from SR-1; therefore, impacts regarding scenic resources associated with a state scenic highway would be less than significant.

Alternative 2 would not adversely affect daytime or nighttime views through creation of a new source of substantial light and glare. Construction would occur during the daytime, and trail lighting would be low-level and directed down toward the trail, in compliance with applicable SCMC and SCCMC lighting regulations. Similar to the Proposed Project with Interim Trail, the potential light and glare impact would be less than significant.

The overall aesthetics impact of Alternative 2 would be **significant and unavoidable** due to tree removal, which is the same as the Proposed Project with the optional Interim Trail.

AIR QUALITY

The air quality impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to the Proposed Project with the optional Interim Trail, which are addressed in Section 3.2, *Air Quality*. The overall impact determination would be less than significant, like the Proposed Project with the optional Interim Trail.

Like the Proposed Project, Alternative 2 would generate construction-related emissions of PM_{10} and other criteria pollutants during construction. The impact would less than the Proposed Project with the optional Interim Trail because Alternative 2 does not include rail demolition and removal during Part 1, and there would be less construction activity required to remove the FRP decking (Part 2) than to remove a paved trail and rebuild the rail.

Once constructed, operational emissions would be the same as the Proposed Project with the optional Interim Trail**,** because function of the trail would be similar, including the net air quality beneficial effect by providing alternative transportation corridor for bicyclists, pedestrians, and other users, which is expected to reduce vehicular travel and associated emissions.

The overall air quality impacts of Alternative 2 would be less than significant, which is the same as the Proposed Project, with or without the optional Interim Trail.

BIOLOGICAL RESOURCES

The impacts to biological resources from Alternative 2 (Interim Trail with Rail Preservation) would be substantially similar to the Proposed Project with the optional Interim Trail, which are described in Section 3.3, *Biological Resources*. The overall impact determination for Alternative 2, would be **significant and unavoidable,** like the Proposed Project with the optional Interim Trail.

Alternative 2 would construct a 16-foot-wide Interim Trail on the rail centerline (Part 1) and later construct the 12-foot-wide Ultimate Trail Configuration (Part 3), which is the same as the Proposed Project with the optional Interim Trail and thus would require the same tree removal, resulting in substantially similar impacts to monarch butterfly roost sites, wildlife movement, and policies protecting trees. These impacts would still be significant and unavoidable.

The impacts associated with rail removal, such as elevated noise, fugitive dust, debris and potentially hazardous materials, would be reduced under Alternative 2 because there would be no

rail removal (Part 1) and rail construction (Part 2). Therefore, Alternative 2 would have less construction-related impacts than the Proposed Project with the optional Interim Trail, but the impact determination would still be significant and unavoidable.

The main impacts associated with Alternative 2 would be substantially similar to those identified for the Proposed Project with the optional Interim Trail, including the removal of mature trees and impacts to sensitive habitats, as well as associated special-status plant and wildlife species, because the trail width and location would be the same. Compared to the Proposed Project with the optional Interim Trail, the Alternative 2 impacts to biological resources are as follows:

- Substantially similar impacts to the Santa Cruz tarplant because the trail width, location and extent near sensitive habitat in the Twin Lakes State Beach open space would be the same.
- Substantially similar impacts to known and potential monarch roost habitat; breeding birds, including bald eagle, peregrine falcon, and other sensitive and common nesting bird species; roosting bats, including the sensitive western red bat; and the San Francisco dusky-footed woodrat.
- Similar but slightly less impacts to federally-listed fish species, western pond turtle, Santa Cruz black salamander, and marine mammal species because no rail removal and thus less ground disturbance.
- Substantially similar impacts to sensitive habitats including coast live oak woodland, arroyo willow riparian, and mixed riparian habitats because the trail width, location and extent would be the same.
- Similar but slightly less impact to the ditch wetland located at the west end of Segment 9.
- Substantially similar impacts to wildlife movement because trail width, location, and required tree removal would be the same.
- Substantially similar impacts associated with tree removal and removal of native, significant and heritage trees because the trail width, location, and required tree removal would be the same.

The overall impacts to biological resources from impact of Alternative 2 would be **significant and unavoidable**, which is the same as the Proposed Project with or without the optional Interim Trail.

CULTURAL RESOURCES

The cultural resources impact of Alternative 2 (Interim Trail with Rail Preservation) would be reduced compared to the impacts of the Proposed Project with the optional Interim Trail, which are addressed in Section 3.4, *Cultural Resources.* This alternative would involve installation of FRP decking over the railroad tracks and ties, whereas the Proposed Project with the optional Interim Trail would involve removal of the rail tracks and ties. Because this alternative would involve preserving the rail line in place, impacts would likely be reduced from significant and unavoidable to less than significant with mitigation.

Alternative 2 would involve installation of FRP decking over the railroad tracks and ties and construction of the optional Interim Trail above the rail line. While the rail line would be temporarily obscured by the trail until the Ultimate Trail Configuration is constructed, the FRP decking would likely protect the significance of a known historical resource. However, the surroundings of the rail line would be altered because of the Project, and mitigation would be required in addition to preserving the rail line. Mitigation measures would include Mitigation Measure CR-1a, which would involve installing historical interpretive exhibits along the trail; and Mitigation Measure CR-1b, which would involve preparing historic documentation prior to construction of the Interim Trail. Implementation of these mitigation measures would help protect the significance of the rail line,

and impacts would be less than significant and reduced compared to the Proposed Project with the optional Interim Trail.

Alternative 2 would require less ground-disturbing work compared to the Proposed Project with the optional Interim Trail, as the rail tracks and ties would not be removed. Therefore, Alternative 2 would have a reduced likelihood of encountering undiscovered historical or archaeological resources, or human remains. While the potential to encounter cultural resources would be reduced, potential to encounter such resources would still exist. Mitigation Measure CR-2, which establishes protocol for unanticipated discovery of cultural resources, would be implemented under Alternative 2, and impacts would be less than significant with mitigation, similar to the Proposed Project with the optional Interim Trail.

The overall cultural resources impact of Alternative 2 would likely be **less than significant with mitigation** as this alternative would preserve the historic rail line. Impacts would likely be reduced compared to the Proposed Project with the optional Interim Trail (significant and unavoidable).

GEOLOGY AND SOILS

The geology and soils impact of Alternative 2 (Interim Trail with Rail Preservation) would be similar to those identified for the Proposed Project, which are addressed in Section 3.5, *Geology and Soils*. The overall impact determination would be less than significant with mitigation, like the Proposed Project with optional Interim Trail.

The Alternative 2 alignment extends through the same geology and soils as the Proposed Project. Thus, like the Proposed Project, Alternative 2 could expose the trail and trail users to risk of injury from liquefaction or landslides, could result in substantial soil erosion or loss of topsoil, and could result in risk to life and property from expansive soils.

The impact associated with soil erosion and loss of topsoil from Alternative 2 would be less than the Proposed Project with optional Interim Trail, because there would be less excavation and earthwork since the rail would not be removed and reconstructed; and because installation and removal of an at-grade Interim Trail would require more ground disturbance than installation of FRP decking.

With implementation of recommendations from the Geotechnical Investigation Reports, the impacts related to risk from unstable soils would be less than significant for Alternative 2, as well as the Proposed Project with the optional Interim Trail, as described in Section 3.5, *Geology and Soils*.

Similar to the Proposed Project, Alternative 2 would involve ground-disturbing activities that may directly or indirectly destroy a unique paleontological resource, site, or unique geologic feature. The impact would be slightly less under Alternative 2 because overall less excavation and earth movement would be required since the rail would not be removed and reconstructed, and because installation and removal of an at-grade Interim Trail would require more ground disturbance than installation of FRP decking. With implementation of mitigation requiring paleontological resource monitoring and reporting during project construction, this impact would be less than significant with mitigation for Alternative 2, as well as the Proposed Project with the optional Interim Trail.

The overall geology and soils impacts of Alternative 2 would be **less than significant with mitigation**, which is the same as the Proposed Project, with or without the optional Interim Trail.

GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

The GHG emissions/climate change impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to those identified for the Proposed Project with optional Interim Trail, which are

addressed in Section 3.6, *Greenhouse Gas Emissions/Climate Change*. The overall impact determination would be less than significant, like the Proposed Project with the optional Interim Trail.

Like the Proposed Project, Alternative 2 would generate GHG emissions during construction from earth moving equipment and truck trips to haul soil. The impact would be similar to but less than the Proposed Project with optional Interim Trail because there would be no rail demolition and thus less earth moving equipment and truck trips for soil and disposal of rail infrastructure. Overall, Alternative 2 would result in less ground disturbance and associated construction-related GHG emissions, and the impact would be less than significant.

Once constructed, the operational GHG emissions from Alternative 2 would be the same as the Proposed Project, with or without the optional Interim Trail. Although Alternative 2 and the Proposed Project would also result in tree removal and minimal new lighting and solid waste disposal, they would provide a new alternative transportation (bicycle and pedestrian) connection and route that would result in a net GHG benefit to the region, which supports implementation of regional and state GHG reduction plans.

The overall GHG emissions/climate change impacts of Alternative 2 would be less than significant, which is the same as the Proposed Project, with or without the optional Interim Trail.

HAZARDS AND HAZARDOUS MATERIALS

The hazards and hazardous materials impacts of Alternative 2 (Interim Trail with Rail Preservation) would be less than those identified for the Proposed Project with the optional Interim Trail, which is addressed in Section 3.7, *Hazards and Hazardous Materials*. Still, the overall impact determination for Alternative 2 would be less than significant with mitigation, like the Proposed Project with the optional Interim Trail.

Similar to the Proposed Project with the optional Interim Trail, Alternative 2 could disturb contaminated soil during construction, because the Project corridor is within 140 feet of two identified hazardous materials sites (the Boardwalk Entry 2 and Ledyard). However, Alternative 2 would disturb less soil since the rail line would not be removed. This impact would be reduced to less than significant with mitigation requiring soil sampling prior to construction (Mitigation Measure HAZ-2a), a program to remediate or manage known contaminated soil during construction (Mitigation Measure HAZ-2a), and a Soils Management Plan developed by a qualified engineer to include measures to avoid exposure to contaminants (Mitigation Measure HAZ-2b).

Unlike the Proposed Project with the optional Interim Trail, Alternative 2 would not entail removal of the Santa Cruz Branch Rail Line or associated structures and equipment (i.e., crossing gates, switch boxes). Without removal of the rail, no impacts would occur related to potential exposure to contaminants present on the track ballast and rail ties that could result in health hazards to construction workers or attendees at the nearby Shoreline Middle School. In fact, coverage of the rail line with FRP decking would preclude the possibility of hazardous contamination from the track ballast and rail ties. Since the rail line would not be removed, Mitigation Measure HAZ-2c that applies to the Proposed Project with the optional Interim Trail and requires evaluation of subgrade soil under the rail line and an asphalt cap to cover contaminated soils and ballast would not be required under Alternative 2. Therefore, impacts would be less than the Proposed Project with the optional Interim Trail. This impact would be less than significant with compliance with existing hazardous material regulations and with mitigation requiring an evaluation of the subgrade soil within the corridor.

The overall hazards and hazardous materials impacts of Alternative 2 would be **less than significant with mitigation,** which is the same as the Proposed Project with the optional Interim Trail. However, Alternative 2 does not require additional mitigation (Mitigation Measure HAZ-2c) associated with removal of the rail line that would occur under the Proposed Project with the optional Interim Trail.

HYDROLOGY AND WATER QUALITY

The hydrology and water quality impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to but somewhat less than, those identified for the Proposed Project with the optional Interim Trail, which are described in Section 3.8, *Hydrology and Water Quality*. The overall impact determination would be less than significant, like the Proposed Project with the optional Interim Trail.

Like the Proposed Project, Alternative 2 could violate water quality standards, alter drainage patterns in the rail corridor through the introduction of new impervious surfaces, and place structures in a 100-year flood hazard area. The impacts of Alternative 2 would be slightly less than the Proposed Project with optional Interim Trail, because Alternate 2 would require less material movement since the rail infrastructure would not be removed and then reconstructed. The amount of new impervious surface would be similar to the Proposed Project with optional Interim Trail, thus similar impacts with respect to altering drainage and interference with groundwater recharge. The impact would be reduced to less than significant through implementation of the pre and post construction best management practices, compliance with the NPDES-required SWPPP and the City of Santa Cruz Grading Ordinance, and incorporation of drainage features into project design.

The overall hydrology and water quality impact of Alternative 2 would be less than significant, which is the same as the Proposed Project, with and without the optional Interim Trail.

LAND USE AND PLANNING

The land use and planning impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar but slightly reduced compared to those identified for the Proposed Project with the optional Interim Trail, which is addressed in Section 3.9, *Land Use and Planning.* Like the Proposed Project and optional Interim Trail, Alternative 2 would be located along the existing rail corridor and would not physically divide an established community. Rather, the trail would increase connectivity within the community. Like the Proposed Project, Alternative 2 would be consistent with most (30 of 31) of the applicable City and County land use policies, as described in Section 3.9. The Proposed Project and Alternative 2 would both be inconsistent with Policy 5.1.6, Development in Sensitive Habitats, of the County's General Plan. The evaluation in Section 3.9 considered policies of the City of Santa Cruz General Plan, the County of Santa Cruz General Plan, Twin Lakes State Beach General Plan, the Santa Cruz County Bicycle Plan, and MBSST Master Plan. City and County ordinances and policies associated with tree removal are addressed in the Biological Resources discussion.

Unlike the Proposed Project, Alternative 2 would be consistent with Policy 1.2.4 of the MBSST Network Master Plan, which intends to develop trails in a way that does not preclude future rail service along the rail corridor. Because Alternative 2 would preserve the existing rail line to allow for possible future use, this alternative would be consistent with most of the applicable City and County land use policies. This impact is considered less than significant, and impacts are slightly reduced compared to the Proposed Project with the optional Interim Trail.

The overall land use and planning impact of Alternative 2 would be **less than significant**, which is the same as the Proposed Project with the optional Interim Trail.

NOISE

The noise impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to but less than those identified for the Proposed Project with optional Interim Trail, which are addressed in Section 3.10, *Noise*. The overall impact determination would be less than significant with mitigation, like the Proposed Project with the optional Interim Trail.

Like the Proposed Project, construction of the Alternative 2 alignment could result in a substantial temporary increase in noise levels and expose persons to groundborne vibration and noise. This impact would be similar to, but less than the Proposed Project with optional Interim Trail because there would be less ground disturbance since the rail infrastructure would not need to be demolished and reconstructed. The distance to sensitive receptors (residences) would be the same because the Interim Trail would be the same width in the same location. The construction impacts would be reduced to a less than significant level by requiring mitigation that implements noise-reducing measures near sensitive receptors and providing notification of construction vibration.

The overall noise impacts of Alternative 2 would be less than significant with mitigation, which is the same as the Proposed Project, with or without the optional Interim Trail

PUBLIC SAFETY AND SERVICES

The public safety and service impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to those identified for the Proposed Project with the optional Interim Trail, which are addressed in Section 3.11, *Public Safety and Services*. The overall impact determination would be less than significant, like the Proposed Project with the optional Interim Trail.

Like the Proposed Project with the optional Interim Trail, Alternative 2 would likely have a similar number of trail users and would not likely result in the need for additional emergency response, fire or police protection, or other public services to maintain acceptable service ratios or response times. However, since the Santa Cruz Branch Rail Line would not be removed under this alternative, emergency access to the trail would be marginally limited because the FRP panels would not likely support emergency vehicles, and emergency responders may need cross the covered rail tracks to access the trail.

The overall public safety and services impacts of Alternative 2 would be **less than significant**, like the Proposed Project with the optional Interim Trail.

TRANSPORTATION

The transportation impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to those identified for the Proposed Project with optional Interim Trail, which are addressed in Section 3.12, *Transportation*. The overall impact determination would be less than significant, like the Proposed Project with the optional Interim Trail.

Similar to the Proposed Project with Interim Trail, transportation impacts during construction of Alternative 2 would be primarily associated with the presence of large construction equipment and vehicles accessing the Project corridor.

Similar to the Proposed Project with the optional Interim Trail, Alternative 2 would ultimately be consistent with the VMT screening criteria set forth by OPR, Caltrans, City, and County. Specifically, Alternative 2 would be consistent with the OPR small project screening criteria of fewer than 110 vehicular trips per day, would not induce travel, would be consistent with AMBAG's SCS, and would

satisfy the conditions of several OPR example projects that do not require induced demand analysis. As such, impacts related to VMT would be less than significant.

Like the Proposed Project with Interim Trail, construction of Alternative 2 could introduce temporary hazards due to the potential for conflict between construction vehicles and existing traffic. This impact would be similar to the Proposed Project with the Interim Trail, as both scenarios would involve three construction phases. Alternative 2 would also involve construction signage and a flagger to be present as needed to maintain public safety while facilitating construction access to the Project corridor.

Operation of Alternative 2 could affect vehicular, bicycle, and pedestrian safety at roadway crossings. This impact would be similar to the Proposed Project with the optional Interim Trail. Under Alternative 2, implementation of the safety design features would reduce the potential for hazards during operation to a less than significant level.

The overall transportation impact of Alternative 2 would be **less than significant**, which is the same as the Proposed Project with the optional Interim Trail.

TRIBAL CULTURAL RESOURCES

The tribal cultural resources impact of Alternative 2 (Interim Trail with Rail Preservation) would be less than significant with mitigation, and impacts would be slightly reduced compared to the Proposed Project with the optional Interim Trail, which is addressed in Section 3.13, *Tribal Cultural Resources.*

Alternative 2 would require less ground-disturbing work than the Proposed Project and optional Interim Trail, as Alternative 2 would not remove the rail tracks and ties. Therefore, this alternative would have a reduced likelihood of encountering unknown tribal cultural resources. While the potential to encounter tribal cultural resources would be reduced, the potential to encounter such resources would still exist. Therefore, Alternative 2 would still require implementation of Mitigation Measures TCR-1a, which would involve conducting Native American monitoring during construction, and TCR-1b, which establishes protocol for the unanticipated discovery of tribal cultural resources.

The overall tribal cultural resources impact of Alternative 2 would be **less than significant with mitigation**, which is the same as the Proposed Project with the optional Interim Trail.

UTILITIES AND SERVICE SYSTEMS

The utilities and service systems impacts of Alternative 2 (Interim Trail with Rail Preservation) would be similar to those identified for the Proposed Project with optional Interim Trail, which are addressed in Section 3.14, *Utilities and Service Systems*. The overall impact determination would be less than significant, like the Proposed Project with the optional Interim Trail.

Water. Under Alternative 2, trail width in Segment 9 would be the same (16 feet) as for the Proposed Project with the Interim Trail. Compared to the optional Interim Trail, Alternative 2 would require a similar amount of water for dust suppression, and would not result in a permanent demand for water or result in the relocation or construction of new or expanded water infrastructure. The impact to water would be less than significant.

Wastewater. Like the Proposed Project with the optional Interim Trail, Alternative 2 would not generate wastewater in excess of existing capacity or result in the relocation or construction of new or expanded wastewater infrastructure. The impact would be less than significant.

Stormwater. Like the Proposed Project with Interim Trail, Alternative 2 would be subject to the requirements of the Construction General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, which would ensure that construction of Alternative 2 would not require the relocation or construction of new or expanded stormwater drainage facilities. Similar to the Proposed Project with Interim Trail, Alternative 2 would be designed to include stormwater drainage design features that would be adequate for future drainage conditions, ensuring that operation of Alternative 2 would not require the additional relocation or construction of stormwater drainage facilities. Therefore, impacts related to stormwater drainage would be less than significant.

Electricity/Natural Gas, Telecommunications. For construction, Alternative 2 would require a similar amount of power or energy to operate tools when compared to the Proposed Project with Interim Trail, as both scenarios would involve three construction phases. While Alternative 2 would require construction of retaining walls, the rail like would not be removed, resulting in an overall similar amount of energy use during construction compared to the Proposed Project with Interim Trail.

For operation, Alternative 2 would result in similar electricity requirements for new lighting, traffic signal poles, and rectangular rapid-flashing beacons as the Proposed Project with the optional Interim Trail. Like Proposed Project, such additions would be installed and operated with extensions from the existing electric system. Neither construction nor operation of Alternative 2 would involve any components requiring telecommunications infrastructure or natural gas. Therefore, Alternative 2 would not involve the relocation of existing electricity, natural gas, or telecommunications facilities. The impacts would be less than significant.

Solid Waste. Construction of Alternative 2 would generate less construction waste than the Proposed Project with the optional Interim Trail. Both scenarios require three construction phases; however, Alternative 2 would involve only one demolition phase (removal of the FRP decking above the rail) whereas the Proposed Project with Interim Trail would involve two demolition phases (rail removal and Interim Trail removal). Operation of Alternative 2 would generate a similar amount of solid waste as the Proposed Project with the optional Interim Trail. Alternative 2 would also result in an increase in permanent population. Any waste generated along the trail from trail use would not be considered new waste added to the waste stream. Solid waste generated from construction and operation could be accommodated at the City of Santa Cruz's RRF landfill and the County's Buena Vista Landfill. The overall utilities and service system impacts of Alternative 2 would be less than significant, which is the same as the Proposed Project with the optional Interim Trail.

Alternative 3 (No Project)

Description

CEQA requires analysis of a No Project alternative to allow decision makers to compare the impacts of approving a project with the impacts of not approving a project (*CEQA Guidelines*, Section 15126.6[e]). The No Project analysis must discuss the existing conditions at the time the NOP is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure. If future uses of the land are predictable, such uses should be discussed as possible no project conditions.

As such, under the No Project alternative, the Coastal Rail Trail Segments 8 and 9 project would not be constructed in the Project corridor, which is the portion of the rail corridor between the Beach Street/Pacific Avenue Roundabout and 17th Avenue. Along Segment 8, there would be no improvements to the existing bicycle lanes and sidewalk between the Beach Street/Pacific Avenue

Roundabout and the SLR Trestle Bridge; and along Segment 9 there would be no new multi-use path between the SLR Trestle Bridge and 17th Avenue (**Figure 2-1**). The Project corridor would remain "as is" with no planned development of a trail for alternative transportation, recreation, or other uses. There would also be no improvements at the Seabright Avenue/Murray Street intersection to add a dedicated right turn from westbound Murray Street to northbound Seabright Avenue to improve traffic flow. The City could modify the intersection in the future as a stand-alone project to improve intersection safety and congestion.

The RTC would maintain and operate the rail corridor in accordance with current policy and legal obligations, which could include rail operation (e.g., freight or passenger service). As described in Section 1.2.2, *Rail Operation and Maintenance*, RTC's rail line maintenance includes, but is not limited to, vegetation control (including potential tree trimming and removal), ditch grading, culvert clearing, and slope repair. RTC is currently moving forward to implement a capital maintenance program for the rail ROW that includes bridge rehabilitation as funding is available.

The No Project scenario does not preclude improvements to the tracks for use or removal of the tracks. However, there are limited funds identified for repairs required for rail operation of any type (e.g., freight, recreational passenger, commuter rail). Although potential future use of the rail is uncertain, it cannot be precluded; and the RTC will be evaluating passenger rail along the rail corridor in 2023–2024.

Rail service is not a distinguishing factor between the Proposed Project and No Project scenarios. In other words, future rail use is equally likely to occur in the foreseeable future under both the Proposed Project and No Project scenarios. Therefore, rail use is not the focus of the No Project analysis. The focus is the difference in environmental impacts as they relate to not constructing the trail.

Impact Analysis

This impact analysis below focuses on the environmental impacts of retaining the rail corridor "as is" and not constructing the trail, particularly in comparison to potentially significant impacts of the Proposed Project.

As summarized in **Table 5-3**, in comparison with the Proposed Project, there would generally be less than significant or no environmental impacts under Alternative 3. In particular, construction-related impacts associated with earth movement and tree removal would be substantially reduced. However, air quality (criteria pollutant) and GHG emissions associated with vehicular traffic would increase, because the trail as an alternative transportation project is expected to result in less vehicular transportation and thus reduced emissions. Additionally, with no project, there would not be benefits to public safety and access, such as improved emergency access to the rail corridor in Segment 9 and bikeway (cycle track) and sidewalk improvements along Beach Street where there are user conflicts in Segment 8.

AESTHETICS

Under Alternative 3 (No Project), it is reasonable and foreseeable that the current visual character and quality of the Project corridor and surrounding lands would generally remain similar to current conditions. There would be no development of a trail within the Project corridor requiring substantial tree removal, nor roadway improvements at the Seabright Avenue/Murray Street intersection. However, the RTC would continue rail line maintenance which includes vegetation control (including potential tree trimming and removal), ditch grading, culvert clearing, and slope repair. Compared to the Proposed Project, the potential tree removal for maintenance would not be

substantial enough to significantly alter scenic vistas. Rail line maintenance would occur regardless and is not a distinguishing factor between the Proposed Project and No Project scenarios.

Alternative 3 would result in no impacts to scenic vistas due to substantial tree removal for trail construction, development of a trail within the rail corridor, or no alterations to existing roadways that would alter scenic views. When compared to the Proposed Project, Alternative 3 would result in substantially less impact to scenic vistas, because substantial tree removal to accommodate trail construction would not be required; and less overall impacts involving scenic vistas, scenic resources visible from a state scenic highway, conflict with applicable regulations that govern scenic quality, and light and glare.

There would be **no impact** to aesthetics from Alternative 3, which would be substantially less than the significant and unavoidable impacts from the Proposed Project, with or without the optional Interim Trail.

AIR QUALITY

Under Alternative 3 (No Project), there would be no construction-related emissions from trail construction that would expose sensitive receptors to pollutant concentrations, compared to existing conditions; thus, impacts associated with construction emissions would be less than the Proposed Project. However, there would be no new trail to provide a bicycle and pedestrian connection that would support a net reduction in regional vehicle trips and associated air pollutant emissions, which would not support the emissions reduction goals of the MBARD AQMP. As described in Section 3.2, *Air Quality,* the Project would have no operation-related emissions from trail use, except occasional minor emissions from maintenance activities (e.g., landscaping equipment, repainting), and would likely result in a decrease in criteria pollutants from the anticipated reduction in vehicular travel. Thus, when compared to the Proposed Project, Alternative 2 would result in less construction impacts, but more operation impacts.

The overall air quality impacts of Alternative 3 would be **less than significant**, which is the same as the Proposed Project with or without the optional Interim Trail.

BIOLOGICAL RESOURCES

The biological resources impacts of Alternative 3 (No Project) would be substantially less than the Proposed Project, with or without the optional Interim Trail. Tree removal, understory removal, ground disturbance, and the associated impacts to sensitive habitats would be limited to the existing maintenance regime of the rail corridor. There would be no widening of the developed footprint within the rail corridor. All significant and unavoidable impacts from tree removal and the associated effects on monarch roost habitat and wildlife movement would not occur. The rail corridor would retain its function as a largely undeveloped linear feature that supports mature trees and connects and buffers the remaining open spaces within the surrounding development.

There would be **no impact** on biological resources from Alternative 3, which would be substantially less than impacts from the Proposed Project with or without the optional Interim Trail (significant and unavoidable).

CULTURAL RESOURCES

The cultural resources impact of Alternative 3 (No Project) would be less than the Proposed Project because there would be no ground disturbance from the construction phase that could adversely affect undiscovered buried archaeological resources or human remains. Further, there would be no

alteration to the rail corridor from rail realignment or introduction of new visual feature and use that would alter the setting of the Santa Cruz Branch Rail Line (a historic resource).

As described in Section 3.4, *Cultural Resources*, the Santa Cruz Branch Rail Line is considered a historical resource that would be significantly impacted if demolished, destroyed or substantially altered. Therefore, compared to the Proposed Project with the optional Interim Trail, the impact of Alternative 3 would be substantially less, because there would be no rail removal (a significant and unavoidable impact) and no ground disturbance from three separate construction phases.

There would be **no impact** to cultural resources from Alternative 3, which would be less than impacts from the Proposed Project without the optional Interim Trail (less than significant with mitigation), and substantially less than the Proposed Project with the optional Interim Trail (significant and unavoidable).

GEOLOGY AND SOILS

Under Alternative 3 (No Project), the impact would be less than the Proposed Project because there would be no construction-related ground disturbance. As described in Section 3.5, *Geology and Soils*, the Proposed Project would result in potential impacts from demolition, grading, and excavation resulting in substantial soil erosion or loss of topsoil or disturbance of paleontological resources, and thus requires mitigation for paleontological resource monitoring and reporting during project construction. These impacts would be substantially more under the Proposed Project with the optional Interim Trail because of the two additional construction phases. In addition, under Alternative 3, there would be no new trail structure with new trail users that could be exposed to increased risk of injury from liquefaction or landslides or expansive soils.

There would be **no impact** related to geology and soils from Alternative 3, which would be less than the Proposed Project with or without the optional Interim Trail, which would have a less than significant with mitigation.

GREENHOUSE GAS EMISSIONS/CLIMATE CHANGE

Under Alternative 3 (No Project), there would be no construction-related GHG emissions or tree removal, and there would be no operational GHG emissions from lighting or solid waste collection and other maintenance activities. As described in Section 3.6, *Greenhouse Gas Emissions/Climate Change*, this Project impacts would be less than significant. However, under the No Project scenario, an essential part of the MBSST Network would not be implemented. This would not be consistent with the City's Climate Action Plan, the County's Climate Action Strategy (CAS), AMBAG's Metropolitan Transportation Plan and Sustainable Communities Strategy, or CARB's Scoping Plan, which include new biking and walking facilities as key to reducing VMT. The MBSST is specifically key to regional alternative transportation options.

Although the No Project scenario does not support implementation of the MBSST Network Master Plan, inconsistency with these strategies does not result in a direct physical effect on the environment that results in increased GHG emissions. However, if the Project is not implemented, the efforts to increase bicycle and pedestrian use would have to be focused elsewhere on other projects or strategies, which may have a greater GHG emissions/climate change impact. It would be speculative to conclude that such tradeoffs would result in significantly worse impacts.

Therefore, the GHG emissions/climate change impact from Alternative 3 would be **less than significant**, which is the same as the Proposed Project with or without the optional Interim Trail.

HAZARDS AND HAZARDOUS MATERIALS

Under Alternative 3 (No Project), there would be no construction-related activities that could disturb contaminated soil, exposing the public or environment to hazardous materials. Therefore, the impact of Alternative 2 would be less than the Proposed Project without the optional Interim Trail, which has one construction period. As described in Section 3.7, *Hazards and Hazardous Materials*, these Project impacts would be less than significant with mitigation, requiring soil sampling prior to construction, a program to remediate or manage known contaminated soil during construction, and a Soils Management Plan developed by a qualified engineer to include measures to avoid exposure to contaminants.

The impact of Alternative 3 would be substantially less than the Proposed Project with the Interim Trail, which has three construction periods and substantial demolition (Part 1 for rail removal and Part 2 for Interim Trail removal). Removal of the rail could result in potential exposure to contaminants still present on the track ballast and rail ties, resulting in health hazards to construction workers or attendees at the nearby Shoreline Middle School. Rail removal requires additional mitigation to evaluate the subgrade soil within the corridor and cap contaminated soils and ballast.

There would be **no impact** related to hazards and hazardous materials from Alternative 3, which would be less than the Proposed Project with or without the optional Interim Trail, which would be less than significant with mitigation.

HYDROLOGY AND WATER QUALITY

Under Alternative 3 (No Project), there would be no construction activities that could violate water quality standards or waste discharge requirements, generate additional sources of polluted runoff, or alter existing drainage patterns. Therefore, the impact would be less than the Proposed Project without the optional Interim Trail, which has one construction period, and substantially less than the Proposed Project with Interim Trail, which has three construction periods. As described in *Section 3.8, Hydrology and Water Quality,* the Project's construction impacts would be less than significant through implementation of the pre and post construction best management practices, compliance with the NPDES-required SWPPP and the City of Santa Cruz Grading Ordinance, and incorporation of drainage features into project design, including vegetated swale. In addition, there would be no trail improvements that could alterations to drainage patterns in the rail corridor through the introduction of new impervious surfaces or result in the placement of structures in a 100-year flood hazard area.

There would be **no impact** related to hydrology and water quality from Alternative 3, which would be less than the Proposed Project with or without the optional Interim Trail, which would be less than significant.

LAND USE AND PLANNING

Under Alternative 3 (No Project), the impact would be similar to the Proposed Project with or without the optional Interim Trail. Although it similarly would not divide an established community, it would not result I the beneficial effect of increasing connectivity within the community.

As described in Section 3.9, *Land Use and Planning*, of the 31 applicable City and County policies evaluated, the Proposed Project would be consistent with all except the County General Plan and LCP Policy 5.1.6, Development in Sensitive Habitats, because it would result in tree removal that would be a significant disruption in sensitive habitat. (Impacts associated with City and County tree

protection ordinances is addressed under *Biological Resources*). The Project would also be consistent with the goals of the RTC's adopted MBSST Network Master Plan.

Although the Alternative 3 (No Project) would not result in an inconsistency with County Policy 5.1.6, it would not be consistent with the goals of the RTC's adopted MBSST Network Master Plan, as well as other City and County policies promoting the construction of multi-use trails and active transportation alternatives. Although Alternative 3 does not support implementation of the MBSST Network Master Plan, not constructing the trail in accordance with the Master Plan would not result in direct physical effects on the environment.

Therefore, the land use and planning impact from Alternative 3 would be **less than significant**, which is the same as the Proposed Project with or without the optional Interim Trail.

NOISE

Under Alternative 3 (No Project), there would be no new trail construction and therefore no exposure of persons (residences and hotels along the alignment) to a substantial temporary increase in noise levels and groundborne vibration, nor to any minor permanent increases in noise from trail use. This impact would be less than the Proposed Project without the optional Interim Trail, which would have one construction period, and substantially less than the Proposed Project with the Interim Trail, which would have three construction periods including two with substantial demolition activities (Part 1 for rail removal, and Part 2 for Interim Trail removal). As described in Section 3.10, *Noise*, these construction impacts would be reduced to less than significant by requiring mitigation that implements noise-reducing measures near sensitive receptors and provides notification of construction vibration.

There would be **no impact** related to noise from Alternative 3, which would be less than the Proposed Project without the optional Interim Trail and substantially less than the Project with the Interim Trail, which under either scenario would be less than significant with mitigation.

PUBLIC SAFETY AND SERVICES

Under Alternative 3 (No Project), there would be no new trail and thus no increased need for additional emergency response, fire or police protection services, or other public services associated with new trail users. However, as described in Section 3.11, *Public Safety and Services*, the new trail would result in the beneficial effect of making the Santa Cruz Branch Rail Line less isolated and thus less susceptible to criminal activity or unsafe behavior. Additionally, the Proposed Project would provide increased emergency access to the rail corridor. Thus, although Alternative 3 would not result in any adverse impacts, it also would not provide these benefits.

Therefore, the public safety and services impact of Alternative 3 would be **less than significant**, which is the same as the Proposed Project with or without the optional Interim Trail.

TRANSPORTATION

Under Alternative 3 (No Project), there would be no new trail construction activities resulting in the presence of large construction equipment or hauling trips to and from the Project corridor, and there would be no temporary hazards related to the potential for conflict between construction vehicles and existing traffic. This impact would be less than the Proposed Project without the optional Interim Trail, which has one construction period, and substantially less than the Proposed Project with the Interim Trail, which has three construction periods including demolition of the rail (Part 1) and demolition of the Interim Trail (Part 2) which results in more hauling trips. As described

in Section 3.12, *Transportation*, the Proposed Project with or without the Interim Trail would be less than significant.

However, because there would be no new trail to provide an alternative means of travel, Alternative 3 would not reduce VMT in the vicinity of the Project corridor. Furthermore, Alternative 3 would fail to address the existing traffic safety hazards along Beach Street where pedestrian, bicycle, and vehicular traffic is heavily congested; and there are user conflicts. These impacts would be greater than the Proposed Project.

Overall, the Alternative 3 transportation impacts would be **less than significant**, increased compared to the Proposed Project (Ultimate Trail Configuration) but would remain less than significant, which is the same as the Proposed Project with or without the optional Interim Trail.

TRIBAL CULTURAL RESOURCES

Under Alternative 3 (No Project), there would be no construction-related ground disturbance could adversely affect undiscovered buried tribal cultural resources. Therefore, this potential project impact would be less than the Proposed Project without the optional Interim Trail which has one construction period, and substantially less than the Proposed Project with the Interim Trail which has three construction periods. As described in Section 3.13, *Tribal Cultural Resources*, this Project impact would be reduced to a less than significant level with mitigation requiring a Native American monitor to be present during construction and preparation of a mitigation plan if tribal cultural resources are identified.

There would be **no impact** related to tribal cultural resources from Alternative 3, which would be less than the Proposed Project with or without the optional Interim Trail, which under either scenario would be less than significant with mitigation.

UTILITIES AND SERVICE SYSTEMS

Under Alternative 3 (No Project), there would be no construction or operational activities that would result in water usage, wastewater generation, or solid waste generation; and there would be no affects to storm drainage, electricity, natural gas, or telecommunication infrastructure. addressed in Section 3.14, *Utilities and Service Systems*, the Proposed Project would require minor increases in water use during construction for dust suppression and revegetation of disturbed areas; and increased solid waste from construction activities, especially with the optional Interim Trail which would have three construction periods instead of one, and which requires substantial demolition (rail removal for Part 1 and Interim Trail removal for Part 2). The increased impervious surface of the new trail would have minor alterations to storm drainage, as storm drain facilities would be incorporated into the trail project. Thus, Project impacts would be less than significant.

There would be **no impact** related to utilities and service systems from Alternative 3, which would be less than significant impacts for the Proposed Project, with or without the optional Interim Trail.

5.3 Environmentally Superior Alternative

Table 5-3, supported by the discussion in Section 5.2, provides a comparison of the environmental impacts of the Proposed Project: Trail next to Rail line (Ultimate Trail Configuration) to the Optional First Phase: Trail on the Rail line (Interim Trail), Alternative 1 (Trail Only), Alternative 2 (Interim Trail with Rail Preservation), and Alternative 3 (No Project). Based on this comparison, Alternative 2 (No Project) would result in less or substantially less environmental impacts for all the resource topics,

compared to the Proposed Project, with and without the optional Interim Trail, as well as compared to Alternatives 1 and 2.

If the environmentally superior alternative is the No Project alternative, CEQA requires the EIR shall also identify an environmentally superior alternative among the other alternatives (*CEQA Guidelines* Section 15126.6). Therefore, the rest of this section focuses on the Proposed Project (Ultimate Trail Configuration), the Optional First Phase (Interim Trail), Alternative 1 (Trail Only), and Alternative 2 (Interim Trail with Rail Preservation).

As described in Section 5.2 and in **Table 5-3**, the overall impacts would be similar, and there is no clear environmentally superior alternative. However, when generally compared to the Proposed Project (Ultimate Trail Configuration):

- Optional First Phase (Interim Trail) and Alternative 2 (Interim Trail with Rail Preservation) would result in greater construction-related impacts because of the two additional construction periods, with Alternative 2 (Interim Trail with Rail Preservation) resulting in less impact because there would be less ground disturbance with no rail removal and reconstruction;
- Alternative 1 (Trail Only), would result in a greater impacts for several topics due to the substantially wider trail and closer proximity to sensitive habitat; and
- Optional First Phase (Interim Trail) and Alternative 1 (Trail Only) would result in greater impacts to cultural resources from removal of the rail, which is eligible for listing as a historic resource by CRHR and NRHP.

Optional First Phase (Interim Trail), when considered as a whole as required by CEQA,[2] would result in more impacts associated with ground disturbance and to cultural resources from temporarily removing the rail (historic resource[3]) and from constructing a wider trail (16 feet instead of 12 feet) during Part 1, although it would result in less tree removal (124 trees instead of 381 trees) during Part 1. If only Part 1 is considered, the impacts associated with tree removal (aesthetics and biological resources) would be substantially less, but it would still be a significant and unavoidable impact because 25% of the existing trees in the Project corridor would be removed; and there would still be a significant and unavoidable impact for temporary removal of the historic rail line. However, the two additional construction periods associated with Part 2 (removing Interim Trail and rebuilding the rail) and Part 3 (constructing Ultimate Trail Configuration) would result in substantially more impacts associated with the additional ground disturbance, as well as more tree removal (404 trees total instead of 381 trees), compared to the Proposed Project (Ultimate Trail Configuration). There would be significant and unavoidable impacts to aesthetics, biological resources, and cultural resources.

Alternative 1 (Trail Only) would result in more impacts associated with ground disturbance and to cultural resources from permanently removing the rail (historic resource[3]) and constructing a substantially wider trail (26 feet instead of 12 feet). Further, the wider trail extends south of the rail line, resulting in more impacts to biological resources including trees, sensitive habitats, and

[2] The optional Interim Trail is composed of three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail. *CEQA Guidelines* (Section 15126) requires all phases or the whole of a project be considered when evaluating environmental impacts.

[3] As described in Section 3.4, *Cultural Resources*, the Santa Cruz Branch Rail Line was recorded on California Department of Parks and Recreation 523 Series forms and evaluated for inclusion in the California Register of Historical Resources (CRHR) and National Register of Historic Places (NRHP). The California Department of Transportation Cultural Studies Office has assumed that the entire resource is eligible for the NRHP for its associations with the history of transportation and economic development in the City and County of Santa Cruz. It is therefore a historical resource for the purposes of the California Environmental Quality Act (CEQA).

protected resources along Twin Lakes State Park; potential monarch roost habitat between the San Lorenzo River and Mountain View Avenue; and where eucalyptus support rookeries for great blue heron, egret, cormorants, and other nesting birds east of the Santa Cruz Harbor. There would be significant and unavoidable impacts to aesthetics, biological resources, and cultural resources.

Alternative 2 (Interim Trail with Rail Preservation) would result in similar impacts described above for the Optional First Phase (Interim Trail) because it also has two construction periods, a wider trail (16 feet instead of 12 feet), and more tree removal (404 trees instead of 380 trees) than the Proposed Project (Ultimate Trail Configuration). If only Part 1 is considered, these impacts would be substantially less, but would still be significant and unavoidable because 25% of the existing trees in the Project corridor would be removed. However, because the historic rail line would not be removed, Alternative 2 would minimize impacts to the cultural resources and would likely reduce the impact from significant and unavoidable to less than significant with mitigation. Additionally, by preserving the rail line, there would be overall less earth movement and construction-related impacts for most topics, although it would not reduce any of the impacts enough to change the significance determination. There would be significant and unavoidable impacts to aesthetics and biological resources.

Table 5-5 presents a summary comparison of the overall impact for each of the resource topics as identified in **Table 5-3**, and identifies the environmentally superior alternative for each resource topic based on that comparison. **Table 5-5** is located at the end of this chapter, following **Tables 5-3** and **5-4**.

Additionally, **Table 5-5** presents a numeric measure for the overall impact determinations to measure the degree of impact for each resource topic, whereby No Impact (NI) is 0, Less than Significant (LTS) is 1, Less than Significant with Mitigation (LTSM) is 2, and Significant and Unavoidable (SU) is 3. This provides for a very general comparison, whereby the higher number represents a greater impact. The results of this exercise are presented in **Table 5-5** and below as follows, and further demonstrates that the overall impacts of the Proposed Project (Ultimate Trail Configuration), Optional First Phase (Interim Trail), Alternative 1 (Trail Only), and Alternative 2 (Interim Trail with Rail Preservation) would be very similar.

- Proposed Project: Trail next to Rail line (Ultimate Trail Configuration) – 23 points
- Optional First Phase: Trail on the Rail line (Interim Trail) – 24 points
- Alternative 1 (Trail Only) – 24 points
- Alternative 2 (Interim Trail with Rail Preservation) – 23 points

There are different ways to identify an environmentally superior alternative when the potential impacts of the Proposed Project and project alternatives are similar. For the purposes of this analysis, the City considered two measures: 1) minimizing significant and unavoidable impacts and 2) environmentally superior for most resource topics.

Minimizing Significant and Unavoidable Project Impacts

As described in **Tables 5-3** and **5-5**, the Proposed Project (Ultimate Trail Configuration), Optional First Phase (Interim Trail), Alternative 1 (Trail Only), and Alternative 2 (Interim Trail with Rail Preservation) would all result in the following significant and unavoidable (SU) impacts.

- Aesthetics
    - Adverse effect on scenic vistas through the removal of mature trees (Impact AES-1)
    - Inconsistency with policies that pertain to tree and vegetation removal (Impact AES-2)

- Biological Resources
  - Adverse effect on monarch butterfly and autumnal and/or wintering roost sites from tree removal (BIO-2)
  - Interference with wildlife movement from tree removal and habitat fragmentation (BIO-11)
  - Conflict with policies and ordinances protecting trees (BIO-12)

The SU impacts to aesthetics and biological resources are due to the substantial tree removal necessary to maintain the minimum width requirements for a Class I multipurpose trail design that safely accommodates bicycles and pedestrians, meets ADA requirements, and CPUC safety requirements. The Ultimate Trail Configuration was modified to the extent feasible to reduce tree removal and impacts to sensitive habitat, while still meeting these requirements, by including several viaducts which has a reduced footprint and less ground disturbance.

Additionally, the Optional First Phase (Interim Trail) and Alternative 1 (Trail Only) would result in the following significant and unavoidable (SU) impact because they include removal of the rail.

- Cultural Resources
  - Adverse effect on historic resources from removal of the Santa Cruz Branch Rail Line (CR-1)

Therefore, when using the measure of minimizing significant and unavoidable impacts, the Proposed Project (Ultimate Trail Configuration) and Alternative 2 (Interim Trail with Rail Preservation) would tie as environmentally superior. This aligns with the numeric measures identified above, whereby these had 23 points, and the other two had 24 points.

When comparing Proposed Project (Ultimate Trail Configuration) and Alternative 2 (Interim Trail with Rail Preservation), the Ultimate Trail Configuration would be more environmentally superior because there would be one construction period instead of three construction periods, which would reduce ground disturbance and associated impacts.

Environmentally Superior for Most Resource Topics

Of the 14 resource topics summarized in **Tables 5-3** and **5-5**, the Proposed Project (Ultimate Trail Configuration) was identified as environmentally superior for 13 topics, all except public safety and services. This is primarily due to the two additional construction periods associated with the Interim Trail, whether it is Optional First Phase (Interim Trail) of the Proposed Project or Alternative 2 (Interim Trail with Rail Preservation). Alternative 1 (Trail Only) was identified as environmentally superior for public safety and services because it would have a substantially wider path throughout the alignment, which could reduce trail conflicts between users and provide better emergency vehicle access.

Therefore, the Proposed Project (Ultimate Trail Configuration) is considered environmentally superior for most resource topics.

Summary

In summary, the **Proposed Project (Ultimate Trail Configuration)** is considered environmentally superior compared to the Optional First Phase (Interim Trail), Alternative 1 (Trail Only), and Alternative 2 (Interim Trail with Rail Preservation). As described above, this is primarily because an Interim Trail requires three construction periods instead of one and more tree removal overall, and because Trail Only is substantially wider (26 feet instead of 12 feet) and results in greater impacts to Twin Lakes State Beach open space.

The following comparisons are provided for additional information.

- When comparing the Proposed Project (Ultimate Trail Configuration) with only Part 1 of the Interim Trail, without implementation of Part 2 (no removal of the Interim Trail) and Part 3 (no construction of the Ultimate Trail Configuration), Part 1 alone would be environmentally superior because there would be one construction period and less overall tree removal (124 trees instead of 380 trees). However, Part 1 would still result in a significant and unavoidable impact to aesthetics and biological resources because it is removing 25% of the existing trees along the rail corridor.
- When comparing the Optional First Phase (Interim Trail) and Alternative 2 (Interim Trail with Rail Preservation), Alternative 2 is considered environmentally superior because it would not likely result in significant and unavoidable impacts to cultural resources from removal of the rail line.

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Aesthetics					
AES-1. The Project would have an adverse effect on scenic vistas through the removal of mature trees.	SU	SU Substantially similar	SU Similar	NI Substantially less	SU Substantially similar
AES-2. The Project would be inconsistent with policies that pertain to tree and vegetation removal.	SU	SU Substantially similar	SU Substantially Similar	NI Substantially less	SU Substantially similar
AES-3. The Project would not adversely affect daytime or nighttime views.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
Overall Impact Determination[b]	*SU*	*SU*	*SU*	*NI*	*SU*
Air Quality					
AIR-1. The Project would not conflict with or obstruct implementation of the adopted MBARD AQMP.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Slightly more[d]	LTS Substantially similar
AIR-2. The Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the region is designated non-attainment.	LTS	LTS Similar, more from construction	LTS Similar, slightly more from construction	LTS Less from construction Slightly more for operation[d]	LTS Similar, slightly less from construction
AIR-3. The Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	LTS Similar, more from construction	LTS Similar, slightly more from construction	NI Less	LTS Similar, slightly less from construction
AIR-4. The Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LTS	LTS Similar, slightly more from construction	LTS Similar	NI Less	LTS Similar, slightly less from construction
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Biological Resources					
BIO-1. The Project could adversely affect State Endangered and Federally Threatened Santa Cruz tarplant.	LTSM BIO-1a, 1b BIO-9a,b,c	LTSM Similar, slightly more BIO-1a,b BIO-9a,b,c	LTSM Similar, more BIO-1a,b BIO-9a,b,c	NI Substantially less	LTSM Substantially similar BIO-1a,b BIO-9a,b,c
BIO-2. The Project could adversely affect monarch butterfly and autumnal and/or wintering roost sites.	SU BIO-2 BIO-9a,b,c	SU Similar, more BIO-2 BIO-9a,b,c	SU Similar, more BIO-2 BIO-9a,b,c	NI Less	SU Substantially similar BIO-2 BIO-9a,b,c
BIO-3. The Project could adversely affect sensitive fish species (tidewater goby, central California coast coho salmon, and central California coast steelhead), critical habitat, and coho Essential Fish Habitat (EFH).	LTSM BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	NI Less	LTSM Similar, slightly less BIO-2 BIO-9a,b,c BIO-10a,b
BIO-4. The Project could adversely affect western pond turtle and Santa Cruz black salamander, if present.	LTSM BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-2 BIO-9a,b,c BIO-10a,b	NI Less	LTSM Similar, slightly less BIO-2 BIO-9a,b,c BIO-10a,b
BIO-5. The Project would adversely affect sensitive and native nesting bird species during construction and operation.	LTSM BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b	NI Less	LTSM Substantially similar BIO-2 BIO-5 BIO-9a,b,c BIO-10a,b

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
BIO-6. Project construction could adversely affect sensitive and common roosting bat species that may use coast live oak woodland and other trees along the alignment.	LTSM BIO-2 BIO-6 BIO-9c	LTSM Similar, more BIO-2 BIO-6 BIO-9c	LTSM Similar, more BIO-2 BIO-6 BIO-9c	NI Less	LTSM Substantially similar BIO-2 BIO-6 BIO-9c
BIO-7. The Project would adversely affect San Francisco Dusky-footed woodrat.	LTSM BIO-2 BIO-7 BIO-9a,c	LTSM Similar, more BIO-2 BIO-7 BIO-9a,c	LTSM Similar, more BIO-2 BIO-7 BIO-9a,c	NI Less	LTSM Substantially similar BIO-2 BIO-7 BIO-9a,c
BIO-8. The Project could adversely affect marine mammals, including southern sea otter.	LTSM BIO-2 BIO-9a,c	LTSM Similar BIO-2 BIO-9a,c	LTSM Similar BIO-2 BIO-9a,c	NI Less	LTSM Substantially similar BIO-2 BIO-9a,c
BIO-9. The Project would result in adverse effects to riparian habitat, other sensitive natural communities, and Coastal Act ESHA.	LTSM BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-9a,b,c BIO-10a,b	NI Less	LTSM Substantially similar BIO-9a,b,c BIO-10a,b
BIO-10. The Project would result in adverse effects to palustrine emergent wetlands and aquatic/riverine habitats.	LTSM BIO-9a,b,c BIO-10a,b	LTSM Similar BIO-9a,b,c BIO-10a,b	LTSM Similar, more BIO-9a,b,c BIO-10a,b	NI Less	LTSM Similar, slightly less BIO-9a,b,c BIO-10a,b
BIO-11. The Project would interfere with wildlife movement.	SU BIO-2 BIO-9a,b,c BIO-10a,b	SU Similar, moreBIO-2 BIO-9a,b,c BIO-10a,b	SU Similar, more BIO-2 BIO-9a,b,c BIO-10a,b	NI Less	SU Substantially similar BIO-2 BIO-9a,b,c BIO-10a,b

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
BIO-12. The project would result in the removal of trees comprising the Santa Cruz urban forest and subject to the City of Santa Cruz Heritage Tree Ordinance and County of Santa Cruz Significant Tree Ordinance.	SU BIO-9a,b,c	SU Similar, more BIO-9a,b,c	SU Similar, more BIO-9a,b,c	NI Less	SU Substantially similar BIO-9a,b,c
Overall Impact Determination[b]	*SU*	*SU*	*SU*	*NI*	*SU*
Cultural Resources					
CR-1. The Project may adversely affect historical resources, including the Santa Cruz Branch Rail Line.	LTSM MM CR-1a	SU Substantially more MM CR-1a MM CR-1b	SU Substantially more MM CR-1a MM CR-1b	NI Substantially less	LTSM Substantially less MM CR-1a MM CR-1b
CR-2. Ground-disturbing activities during project construction may unearth or adversely impact subsurface archaeological resources.	LTSM MM CR-2	LTSM Similar, more MM CR-2	LTSM Similar, slightly more MM CR-2	NI Substantially less	LTSM Similar, slightly less MM CR-2
CR-3. Ground-disturbing activities during project construction may disturb human remains.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Similar, slightly less
Overall Impact Determination[b]	*LTSM*	*SU*	*SU*	*NI*	*LTSM*

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Geology and Soils					
GEO-1. The Project would not exacerbate the existing exposure of people or structures to risks from strong seismic ground shaking.	LTS	LTS Substantially similar	LTS Substantially similar	NI Substantially less	LTS Substantially similar
GEO-2. The Project may exacerbate exposure of the public to liquefaction or landslide hazards and may be located on a geological unit or soil that would become unstable as a result of lateral spreading, landslides, and liquefaction.	LTS	LTS Substantially similar	LTS Substantially similar	NI Substantially less	LTS Substantially similar
GEO-3. The Project may result in substantial soil erosion or loss of topsoil.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Similar, less
GEO-4. The Project would not exacerbate the existing risk to life or property resulting from expansive soils.	LTS	LTS Substantially similar	LTS Substantially similar	NI Substantially less	LTS Similar, more
GEO-5. Ground-disturbing activities during Project construction may directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LTSM MM GEO-5	LTSM Similar, more MM GEO-5	LTSM Similar, slightly more MM GEO-5	NI Substantially less	LTS Similar, less MM GEO-5
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*
Greenhouse Gas Emissions/Climate Change					
GHG-1. The Project would not result in GHG emissions that would have a significant impact on the environment.	LTS	LTS Similar, more	LTSM Similar, slightly more	NI Substantially less	LTS Similar, slightly less
GHG-2. The Project would be consistent with applicable GHG reduction plans.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Slightly more[d]	LTS Substantially similar

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
GHG-3. The Project would not expose people or structures to substantial risk of loss, injury, or death from projected sea level rise or flooding.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Hazards and Hazardous Materials					
HAZ-1. Construction of the Project would involve use, disposal, or transportation of hazardous materials, which could be accidentally released.	LTS	LTS Similar, more	LTS Similar, more	NI Substantially less	LTS Similar, less
HAZ-2. Ground disturbance during construction could release soil contaminants.	LTSM MM HAZ-2a MM HAZ-2b	LTSM Substantially more MM HAZ-2a MM HAZ-2b MM HAZ-2c	LTSM Substantially more MM HAZ-2a MM HAZ-2b MM HAZ-2c	NI Substantially less	LTSM Substantially less MM HAZ-2a MM HAZ-2b
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*
Hydrology and Water Quality					
HYD-1. The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Similar, slightly less
HYD-2. The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge.	LTS	LTS Similar, slightly more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
HYD-3. The Project would not substantially alter drainage patterns in the Project corridor or vicinity.	LTS	LTS Similar, slightly more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
HYD-4. The Project would not in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*NI*	*LTS*
Land Use and Planning					
LUP-1. The Project would not physically divide an established community.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Similar, slightly more	LTS Substantially similar
LUP-2. The Project would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	LTS Similar	LTS Similar, more	LTS Similar	LTS Similar, slightly less
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Noise					
N-1. Construction may result in a substantial temporary increase in noise levels.	LTSM MM N-1	LTSM Similar, more MM N-1	LTSM Similar, slightly more MM N-1	NI Substantially less	LTSM Similar, less MM N-1
N-2. Operation of the Project would not expose persons to or generate excessive noise levels.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Similar, less
N-3. Construction would potentially expose persons to or generate excessive groundborne vibration or groundborne noise levels.	LTSM MM N-3	LTSM Similar, more MM N-3	LTSM Similar, slightly more MM N-3	NI Substantially less	LTSM Similar, less MM N-3
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Public Safety and Services					
PUB-1. The Project would not result in the need for additional fire protection facilities or emergency medical services response to maintain acceptable service ratios or response times.	LTS	LTS Substantially similar	LTS Substantially similar, slightly less	LTS Less for increased service calls More since no improved access to rail corridor	LTS Substantially similar
PUB-2. The Project would not result in the need for additional police protection or law enforcement facilities to maintain acceptable service ratios or response times.	LTS	LTS Substantially similar	LTS Substantially similar, slightly less	NI Less	LTS Substantially similar
PUB-3. The Project would not result in the need for the construction of new or additional park facilities, nor the degradation of existing facilities.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
PUB-4. The Project would not result in the need for the construction of new or additional health service facilities.	LTS	LTS Substantially similar	LTS Substantially similar	LTS Less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*
Transportation					
T-1. The Project would meet the screening criteria set by OPR, Caltrans, City of Santa Cruz, and Santa Cruz County and thus would not conflict or be inconsistent with *CEQA Guidelines*, Section 15064.3(b).	LTS	LTS Similar, more	LTS Similar, slightly more	LTS Less for construction traffic More because no reduced VMT	LTS Substantially similar
T-2. Neither construction nor operation of the Project would substantially increase hazards due to a geometric design feature or incompatible use.	LTS	LTS Similar, more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*LTS*	*LTS*

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)
Tribal Cultural Resources					
TCR-1. The Project may cause a substantial adverse change in the significance of a tribal cultural resource.	LTSM MM TCR-1a MM TCR-1b	LTSM Similar, more MM TCR-1a MM TCR-1b	LTSM Similar, slightly more MM TCR-1a MM TCR-1b	NI Substantially less	LTSM Similar, less MM TCR-1a MM TCR-1b
Overall Impact Determination[b]	*LTSM*	*LTSM*	*LTSM*	*NI*	*LTSM*
Utilities and Service Systems					
UTIL-1. Sufficient water supplies are available to serve the Project, and the Project would not result in the relocation or construction of new or expanded water facilities.	LTS	LTS Similar, slightly more	LTS Similar, slightly more	NI Substantially less	LTS Substantially similar
UTIL-2. The Project would not generate wastewater in excess of existing treatment capacity, and would not require or result in the relocation or construction of new or expanded wastewater treatment facilities.	LTS	LTS Substantially similar	LTS Substantially similar	NI Less	LTS Substantially similar
UTIL-3. The Project would not require or result in the relocation or construction of new or expanded stormwater drainage, electric power, natural gas, or telecommunications facilities.	LTS	LTS Similar, more power	LTS Similar, slightly more power	NI Less	LTS Substantially similar
UTIL-4. The Project would not generate solid waste in excess of local landfill capacity.	LTS	LTS Substantially more	LTS More	NI Substantially less	LTS Similar, slightly less
Overall Impact Determination[b]	*LTS*	*LTS*	*LTS*	*NI*	*LTS*

Table 5-3 Comparison of Impacts[a] for Proposed Project and Project Alternatives

Resource Topics and Impacts[b]	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared to Proposed Project (Ultimate Trail Configuration)			Compared to Optional First Phase: Interim Trail
		Optional First Phase: Trail on the Rail Line (Interim Trail)[c]	Alternative 1 (Trail Only)	Alternative 3 (No Project)	Alternative 2 (Interim Trail with Rail Preservation)

[a] The impacts of the Proposed Project are presented in the first column with the impact determination for the *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration*) presented in the second column, using the abbreviations identified below. The impacts and required mitigation for the *Optional First Phrase: Trail on the Rail Line (Interim Trail)*[3] and the anticipated impacts and mitigation of Alternative 1 (Trail Only) and Alternative 3 (No Project) are presented and described in comparison to the *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)* (e.g., similar, more, less), with the reasoning presented primarily in the text discussion. However, the impacts and required mitigation for Alternative 2 (Interim Trail with Rail Preservation) are presented and compared to the Proposed Project's *Optional First Phrase: Trail on the Rail Line (Interim Trail),* because Alternative 2 was developed to reduce significant impacts of the optional Interim Trail (removal of a historic resource) that would not occur with *Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)*. A summary of the required mitigation is presented in **Table 5-4**.

[b] The "Overall Impact Determination" for the resource topic is based on the highest or "worst" level of impact for the resource topic.

[c] The impact determinations are for the whole of the optional Interim Trail, including implementation of all three parts: (1) removal of the rail and construction of the Interim Trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail. This results in three separate construction periods

[d] The No Project alternative was determined to have more operational impact than the Proposed Project, because the Proposed Project would provide alternative transportation for bicycles and pedestrians, which is anticipated to reduce vehicular use and associated emissions, which is the goal in several planning documents including: California Air Resources Board Scoping Plan, Monterey Bay Air Resources District Air Quality Management Plan, Association of Monterey Bay Area Government Metropolitan Transportation Plan and Sustainable Communities Strategy, City Climate Action Plan, County Climate Action Strategy.

NI = No Impact

LTS = Less than Significant without Mitigation

LTSM = Less than Significant with Mitigation

SU = Significant & Unavoidable

MM = Mitigation Measure

Table 5-4 Summary of Mitigation Measures Identified for Proposed Project and Project Alternatives

Mitigation Measure	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)	Alternative 3 (No Project)
Note: Most of the mitigation measures are required for the Proposed Project, with or without the optional Interim Trail, and Alternatives 1 and 2. The shaded rows indicate for which impacts the mitigation requirements are different.					
BIO-1a. Implement Protections for the Santa Cruz tarplant population in Twin Lakes State Park.	Yes	Yes	Yes	Yes	No
BIO-1b. Install Permanent Fencing between Interim Trail and Twin Lakes State Beach near Santa Cruz Tarplant Habitat (Interim Trail only).	Yes	Yes	Yes	Yes	No
BIO-2. Conduct Biological Monitoring for Sensitive Wildlife Species.	Yes	Yes	Yes	Yes	No
BIO-5. Conduct Breeding Bird Surveys and Identify Protective Buffers prior to Construction, if Construction occurs between February 1 and August 31.	Yes	Yes	Yes	Yes	No
BIO-6. Conduct Bat Surveys and Implement Measures to Protect Roosting Bats during Construction.	Yes	Yes	Yes	Yes	No
BIO-9a. Minimize Construction in Sensitive Habitats and Install Temporary Protective Fencing.	Yes	Yes	Yes	Yes	No
BIO-9b. Develop Project-specific Biological Resources Mitigation and Management Plan for Impacts to Biological Resources Resulting from Trail Construction and Operation.	Yes	Yes	Yes	Yes	No
BIO-9c. Implement Best Management Practices to Protect Biological Resources during Construction.	Yes	Yes	Yes	Yes	No
BIO-10a. Minimize Construction-related Activities in Palustrine Emergent Wetlands and Aquatic/Riverine Habitats.	Yes	Yes	Yes	Yes	No
BIO-10b. Develop and Implement Aquatic Resources Mitigation and Monitoring Plan.	Yes	Yes	Yes	Yes	No
CR-1a. Install historical interpretive exhibits along trail prior to trail use.	Yes	Yes	Yes	Yes	No
CR-1b. Prepare historic documentation package prior to rail removal (Interim Trail only).	No	Yes	Yes	No	No
CR-2. Implement protocol for unanticipated discovery of cultural resources.	Yes	Yes	Yes	Yes	No
GEO-5. Implement paleontological resources protection measures during construction in high sensitivity areas.	Yes	Yes	Yes	Yes	No

Table 5-4 Summary of Mitigation Measures Identified for Proposed Project and Project Alternatives

Mitigation Measure	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Optional First Phase: Trail on the Rail Line (Interim Trail)	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)	Alternative 3 (No Project)
HAZ-2a. Conduct soil sampling and implement necessary remediations.	Yes	Yes	Yes	Yes	No
HAZ-2b. Prepare and implement Soils Management Plan.	Yes	Yes	Yes	Yes	No
HAZ-2c. Evaluate subgrade soil and cap contaminated soils and ballast prior to rail and trail demolition (Interim Trail only Parts 1 and 2 only).	No	Yes	Yes	No	No
N-1. Implement noise-reducing measures for construction equipment used within 550 feet of residences or hotels.	Yes	Yes	Yes	Yes	No
N-3. Provide notification of construction vibration to residential units within 50 feet.	Yes	Yes	Yes	Yes	No
TCR-1a. Conduct Native American monitoring during construction.	Yes	Yes	Yes	Yes	No
TCR-1b. Implement protocol for unanticipated discovery of tribal cultural resources, if Native American monitor is not present.	Yes	Yes	Yes	Yes	No

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	
Aesthetics	Significant and unavoidable (381 trees removed)	Substantially similar (404 trees removed)[b]	Substantially similar, slightly more because additional trees removed along Twin Lakes State Park[c, d]	Substantially similar (404 trees removed)[b] *Compared to Optional First Phase: Substantially similar*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*SU (3)*	*SU (3)*	*SU (3)*	*SU (3)*	*NI (0)*	
Air Quality	Less than Significant	Similar, but more emissions from construction activities because of the two additional construction periods, including demolition of the rail (Part 1) and demolition of the Interim Trail (Part 2) and hauling	Similar, but slightly more emissions from construction activities because of the wider trail (26 feet compared to 12 feet) and rail demolition and hauling	Similar, but more emissions from construction activities because of the two additional construction periods *Compared to Optional First Phase: Slightly less because no rail removal & reconstruction*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*NI (0)*	
Biological Resources	Significant and unavoidable	Substantially similar[e]	Substantially similar, slightly more because of wider trail and additional tree removal and impacts to ESHA along Twin Lakes State Park[c, d]	Substantially similar *Compared to Optional First Phase: Substantially similar*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	
Impact Determination[a]	*SU (3)*	*SU (3)*	*SU (3)*	*SU (3)*	*NI (0)*	
Cultural Resources	Less than Significant with Mitigation	More due to the temporary removal of the Santa Cruz Branch Rail Line and two additional construction periods	More due to the permanent removal of the Santa Cruz Branch Rail Line and wider construction footprint	Similar, but more due to two additional construction periods. *Compared to Optional First Phase: Substantially less because less ground disturbance since no rail removal & reconstruction*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTSM (2)*	*SU (3)*	*SU (3)*	*LTSM (2)*	*NI (0)*	
Geology and Soils	Less than Significant with Mitigation	More soil erosion and loss of topsoil, as well as increased risk of discovering paleontological resources, from two additional construction periods	Slightly more soil erosion and loss of topsoil, as well as increased risk of discovering paleontological resources, from wider construction footprint	More soil erosion and loss of topsoil, as well as increased risk of discovering paleontological resources, from two additional construction periods *Compared to Optional First Phase: Less because reduced ground disturbance since no rail removal & reconstruction*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*NI (0)*	
Greenhouse Gas Emissions/Climate Change	Less than Significant	Similar, but more emissions from two additional	Similar, but slightly more from wider construction	Similar, but more emissions from two additional	Substantially less construction emissions, but	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	
		construction periods and associated emissions	footprint and associated emissions	construction periods and associated emissions *Compared to Optional First Phase: Slightly less because no rail removal & reconstruction*	more from operational emissions because no trail and thus no reduced vehicular use and associated emissions	
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	
Hazards and Hazardous Materials	Less than Significant with Mitigation	Substantially more potential for release of soil contaminates and exposure to construction personnel from removing rail and two additional construction periods	Substantially more potential for release of soil contaminates and exposure to construction personnel from removing rail	More potential for release of soil contaminates and exposure to construction personnel from two additional construction periods *Compared to Optional First Phase: Substantially less potential for release of soil contaminants because no rail removal & less ground disturbance*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*NI (0)*	
Hydrology and Water Quality	Less than Significant with Mitigation	Similar, but more risk of adversely effecting water quality,	Similar, but slightly more risk of adverse effects from substantially	Similar, but more risk of adversely effecting water quality, groundwater, and	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	
		groundwater, and drainage patterns from two additional construction periods	wider trail with larger construction footprint and more new impervious surface	drainage patterns from two additional construction periods *Compared to Optional First Phase: Similar, slightly less because no rail removal & less ground disturbance*		
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*NI (0)*	
Land Use and Planning	Less than Significant	Substantially similar, because also inconsistent with Policy 5.1.6, Development in Sensitive Habitats of the County's General Plan due to tree removal	Similar, but slightly more because inconsistent with County Policy 5.1.6 from tree removal, plus inconsistent with Policy 1.2.4 of the MBSST Master Plan from permanent removal of the rail is inconsistent with.	Substantially similar, because also inconsistent with County Policy 5.1.6 *Compared to Optional First Phase: Substantially similar (same reason)*	Similar, but more because no trail increasing connectivity in the community and inconsistent with Policy 1.2.4 of MBSST Master Plan, but not inconsistent with County Policy 5.1.6	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	
Noise	Less than Significant with Mitigation	Similar, but more for construction because of two additional construction periods that include demolition	Similar, but slightly more for construction because substantially wider trail extends closer to sensitive	Similar, but more for construction because of two additional construction periods *Compared to Optional First Phase: Similar, but less*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	
		(rail removal for Part 1 and Interim Trail removal for Part 2)	receptors on the south side and because includes rail demolition	*because no rail demo, removal & reconstruction*		
Impact Determination[a]	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*NI (0)*	
Public Safety and Services	Less than Significant	Substantially similar	Substantially similar, slightly less because Alternative 1 would have a substantially wider path throughout the alignment, which could reduce trail conflicts between users and provide better emergency vehicle access	Similar, slightly more because emergency vehicles cannot travel on FRP trail *Compared to Optional First Phase: Similar, slightly more (same reason)*	Less for increased service calls More since no improved access to rail corridor	Alternative 1
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	
Transportation	Less than Significant	Similar, but more because two additional construction periods involving demolition results in more hauling trips and construction-related traffic, increasing temporary hazards	Similar, but slightly more because construction involves demolition and a substantially wider trail requiring more materials, both of which could increase temporary hazards and potential for	Similar, but slightly more due to two additional construction periods *Compared to Optional First Phase: Substantially similar*	Less for construction traffic More because no reduced VMT	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	
		and potential for conflict between construction vehicles and existing traffic	conflict between construction vehicles and existing traffic			
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	
Tribal Cultural Resources	Less than Significant with Mitigation	Similar, but more because of the two additional construction periods and associated risk of discovery	Similar, but slightly more because the substantially wider trail requires more ground disturbance and associated risk of discovery	Similar, but more because of the two additional construction periods *Compared to Optional First Phase: Similar, but less because reduced ground disturbance from no rail removal*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*LTSM (2)*	*NI (0)*	
Utilities and Service Systems	Less than Significant	More, because of the additional solid waste generated by the two additional construction periods and demolition of the rail (Part 1) and Interim Trail (Part 2)	More, because of the additional solid waste generated by demolition of the rail	More, because of the additional solid waste generated by the two additional construction periods *Compared to Optional First Phase: Similar, but less because no rail demolition & removal*	Substantially less	Proposed Project: Trail Next to Rail (Ultimate Trail Configuration)
Impact Determination[a]	*LTS (1)*	*LTS (1)*	*LTS (1)*	*LTS (1)*	*NI (0)*	
Total Impact Points	**23**	**24**	**24**	**23**	**4**	

Table 5-5 Summary Comparison of Impacts[a] and Environmentally Superior Alternative by Resource Topic

Resource Topic	Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)	Compared Proposed Project: Trail Next to Rail Line (Ultimate Trail Configuration)				Environmentally Superior (excluding No Project)
		Optional First Phase: Trail on the Rail Line (Interim Trail) Parts 1–3	Alternative 1 (Trail Only)	Alternative 2 (Interim Trail with Rail Preservation)[f]	Alternative 3 (No Project)	

[a] The impact determination represents the overall or combined project impact (highest or "worst" level of impact) for the resource topic, as summarized in **Table 5-3**. The numbers in parentheses are defined below and provide a numeric measure to the degree of impact, for purposes of providing a means for comparing the impact within each environmental topic and the sum across all environmental topics.

[b] The optional Interim Trail as a whole would result in the removal of approximately 404 trees. 124 trees (Part 1 construction of Interim Trail) + 280 trees (Part 3 construction of Ultimate Trail Configuration) = 404 trees. Alternative 2 (Interim Trail with Rail Preservation) is assumed to result in the same amount of tree removal because it would be the same width (16 feet) and include a similar three-part implementation scenario.

[c] CEQA does not require alternatives be evaluated at an equal level of detail as the Proposed Project (*CEQA Guidelines*, Section 15126.6); therefore, the estimated tree removal for the Alternative 1 (Trail Only) was not calculated. However, based on the differences in trail width and location, it is roughly estimated (i.e., not exact or detailed, but may be useful in a rough, general way) that the 26-foot-wide Trail Only alternative could result in more tree removal than the Proposed Project, with or without the optional Interim Trail. Although there would be less tree removal north of the tracks (Trail Only would extend northward 10 feet less than the Ultimate Trail Configuration), there would be more tree removal south of the tracks (Trail Only would extend southward 5 feet more than Interim Trail Part 1), resulting in overall tree removal that would be comparable to or more than the Proposed Project.

[d] As described in Section 5.3 for Alternative 1 (Trail Only), the Trail Only impacts to biological resources would be substantially similar to, but slightly greater than, those identified for the Proposed Project. This is because of the additional potential impacts caused by construction and use of a substantially wider trail and because of tree removal south of the rail line, particularly where it extends through Twin Lakes State Park which has high visual quality and high function and value for biological resources in an environmentally sensitive habitat area (ESHA), east of the San Lorenzo River and west of Mountain View Avenue in potential monarch roost habitat, and east of the Santa Cruz Harbor where eucalyptus support rookeries for great blue heron, egret, cormorants, and other nesting birds.

[e] Compared to the Proposed Project (Ultimate Trail Configuration), implementation of Interim Trail Part 1 would result in less tree removal (124 trees compared to 381 trees), although the wider trail would extend on the south side of the tracks, slightly increasing impacts to resources (trees, ESHA, tarplant) along Twin Lakes State Beach. However, implementation of the optional Interim Trail as a whole (Parts 1, 2, 3) would result in more tree removal (404 trees compared to 381 trees) and result in greater construction-related impacts from the two additional construction periods.

[f] Alternative 2 (Interim Trail with Rail Preservation) is also compared specifically to the Optional First Phase (Interim Trail) because it provides an apples-to-apples comparison of the two Interim Trail scenarios evaluated. This comparison is in parentheses below the comparison with the Proposed Project (Ultimate Trail Configuration).

NI = No Impact (0)

LTS = Less than Significant without Mitigation (1)

LTSM = Less than Significant with Mitigation (2)

SU = Significant & Unavoidable (3)

This page intentionally left blank.

6 List of Preparers and References

6.1 List of Preparers

This EIR was prepared by the City of Santa Cruz (City), as the lead agency under the California Environmental Quality Act (CEQA).

The City prepared the EIR in coordination with County of Santa Cruz (County) and the Santa Cruz County Regional Transportation Commission (RTC), which are responsible agencies. For the purposes of CEQA, the term "responsible agency" includes other public agencies that have discretionary approval authority over the **Coastal Rail Trail Segments 8 and 9 Project** (Project).

The City's lead consultant is RRM Design Group, supported by several subconsultants for project design, including MME Engineering, Pacific Crest Engineering, Weber Hayes, W-Trans, Zephyr Rail, and Thoma Electric.

The technical analyses therein and compilation of the EIR were prepared by RRM's consultant team, Harris & Associates (Harris), with support from Rincon Consultants (Rincon) and EcoSystems West (ESW). Key individuals associated with the preparation of this EIR are listed below.

Lead Agency

City of Santa Cruz

Nathan Nguyen, PE, Project Manager

Ricardo Valdes, PE, Deputy Project Manager

Chris Schneiter, PE, Engineer

Michael Ferry, Senior Planner

Lead Design Consultant

RRM Design

Mike Sherrod, Principal-in-Charge

Kayla Szubielski, PLA, Project Manager

Darren Choy, PE, Lead Civil Engineer

EIR Consultant Team

Project Management

Kate Elliott, Project Manager (Harris)

Esther Daigneault, Deputy Project Manager (Harris)

Nicole West/Kari Zajac, Deputy Project Manager (Rincon)

Technical Analysis and Production

Aesthetics

Nichole Yee, Rincon

Nicholas Carter, Rincon

Air Quality and Greenhouse Gas Emissions/Climate Change

Sharon Toland, Harris

Biological Resources

Justin Davilla, ESW

Erin McGinty, ESW

William Davilla, ESW

Cultural Resources

Steven Treffers, Rincon (Historic)

Hannah Haas, Rincon (Archaeology)

Heather Clifford, Rincon (Paleontology)

Virginia Dussell, Rincon

Geology and Soils

Esther Daigneault, Harris

Elizabeth Mitchell, PCE (Tech Report)

Hazards and Hazardous Materials

Nicholas Carter, Rincon

Jesse Voremberg, Rincon

Elizabeth Mitchell, PCE (Tech Report)

Hydrology and Water Quality

Esther Daigneault, Harris

Darren Choy, RRM

Balance Hydrologics (Tech Report)

Land Use and Planning

Kayleigh Limbach, Rincon

Noise

Sharon Toland, Harris

Public Safety and Services

Virginia Dussell, Rincon

Jesse Voremberg, Rincon

Recreation

Jesse Voremberg, Rincon

Transportation

Taylor Freeman, Rincon

Tribal Cultural Resources

Hannah Haas, Rincon

Nicholas Carter, Rincon

Utilities and Service Systems

Taylor Freeman, Rincon

Effects Found to be Less than Significant and Other CEQA-Required Discussions

Esther Daigneault, Harris

Kari Zajac, Rincon

Project Alternatives

Kate Elliott, Harris

Graphics Support

Randy Deodat, Harris

Max Antono, Rincon

Editing and Production

Lindsey Messner, Harris

6.2 References

Chapter 1 Introduction

Santa Cruz County Friends of the Rail & Trail (Rail and Trail) (FORT). 2022. "Purpose and Mission." *Friends of the Rail Trail.* https://santacruztrail.org/railtrail/purpose-mission. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

_____. 2014. *Monterey Bay Sanctuary Scenic Trail Network Master Plan.* Santa Cruz, CA. February 6, 2014.

Chapter 2 Project Description

AMEC Geomatrix. 2009. *Phase II Investigations and Human Health Risk Assessment for Arsenic: Santa Cruz Branch Line*. December 2009.

City of Santa Cruz. 2014. *Storm Water Best Management Practices for Private and Public Development Projects*. March 2014.

Pacific Crest Engineering. 2021. *Geotechnical Investigation Report*. September 2021.

RRM. 2022. Geographic Information Systems Files. June 23, 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2014. *Monterey Bay Sanctuary Scenic Trail Network Master Plan.* Santa Cruz, CA. February 6, 2014.

_____. 2019. *Final Unified Corridor Investment Study*. January 2019. https://www.sccrtc.org/wp-content/uploads/2019/01/UCS-Final-January2019.pdf. Accessed September 2022.

Chapter 3 Environmental Impact Analysis

Santa Cruz County Regional Transportation Commission (RTC). 2013. 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

Section 3.1 Aesthetics

California Department of Transportation (Caltrans). 2019. California State Scenic Highway Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa. Accessed September 2022.

Rincon Consultants, Inc. 2022. *Visual Impact Memorandum, Coastal Rail Trail Segments 8 and 9*. August 2022.

Santa Cruz, City of. 2011. *Community Design Element of the General Plan*.

_____. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2018. *Santa Cruz Rail Trail Arts Master Plan*.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

Section 3.2 Air Quality

Bay Area Air Quality Management District (BAAQMD). 2017. "Air Quality Standards and Attainment Status." Last updated January 5, 2017. https://www.baaqmd.gov/about-air-quality/research-and-data/air-quality-standards-and-attainment-status. Accessed September 2022.

California Air Resources Board (CARB). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* Stationary Source Division, Mobile Source Control Division. Sacramento, CA. October 2000.

_____. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* Sacramento, CA. April 2005.

_____. 2022a. "Maps of State and Federal Area Designations." https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed September 2022.

_____. 2022b. "Top 4 Summary." [dataset]. Sacramento, CA.

Monterey Bay Air Resources District (MBARD). 2008. *CEQA Air Quality Guidelines*. Monterey, CA. February 2008.

_____. 2017. *2012–2015 Air Quality Management Plan.* Monterey, CA. March 15, 2017.

National Oceanic and Atmospheric Administration (NOAA). 2018. "Did You Know? Subtropical Highs." *National Centers for Environmental Information*. https://www.ncdc.noaa.gov/monitoring-references/dyk/subtropical-highs. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California, Conservation and Open Space Element*. December 19, 1994.

_____. 2022. S*ustainability Policy and Regulatory Update Draft Environmental Impact Report* (SCH #2020079005). April.

State Water Resources Control Board (SWRCB). 2022. "Disposal Facilities Authorized to Accept Treated Wood Waste (TWW)." Land Disposal Program. Page updated June 30. https://www.waterboards.ca.gov/water_issues/programs/land_disposal/treated_wood_waste.html. Accessed September 2022.

U.S. Environmental Protection Agency (USEPA). 2018. *Report on the Environment – Ozone Concentrations*. https://cfpub.epa.gov/roe/indicator_pdf.cfm?i=8. Accessed September 2022.

Western Regional Climate Center. 2022. "Period of Record Monthly Climate Summary, Santa Cruz, California." https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7916. Accessed September 2022.

Section 3.3 Biological Resources

Allaback, Mark. 2016. Wildlife Biologist, Biosearch Associates. Personal communication via email regarding San Francisco dusky-footed woodrat relocation methods, with Erin McGinty, Wildlife Biologist, EcoSystems West Consulting Group. December 15, 2016.

Alley, D. 2022. Fisheries Biologist, DW Alley and Associates. Personal communication via email regarding the presence of Pacific lamprey in the San Lorenzo River watershed. February 28, 2022.

Baldwin B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California*. Second Edition. University of California Press, Berkeley.

Barbour, M., T. Keeler-Wolf, and A. A. Schoenherr, editors. 2007. *Terrestrial Vegetation of California*. Third Edition. University of California Press, Berkeley, Los Angeles and London.

Beier and Loe 1992. "A Checklist for Evaluating Impacts to Wildlife Corridors." *Wildlife Society Bulletin*, Volume 20: 434–440.

Bolster, B.C., Editor. 1998. *Terrestrial Mammal Species of Special Concern in California*. Draft Final Report prepared by P.V. Brylski, P.W. Collins, E.D. Pierson, W.E. Rainey, and T.E. Kucera. Report submitted to California Department of Fish and Game Wildlife Management Division, Nongame Bird and Mammal Conservation Program for Contract No. FG3146WM.

Bond, M. 2003. *Principles of Wildlife Corridor Design*. Prepared for the Center for Biological Diversity. October 2003.

Bowman, R. H. and D. C. Estrada. 1980. Soil Survey of Santa Cruz County, California. U.S. Department of Agriculture, Soil Conservation Service. 148 pp. & maps.

Buehler, D. A. 2020. Bald Eagle (*Haliaeetus leucocephalus*), version 1.0. In *Birds of the World* (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.baleag.01. Accessed September 2022.

CalFish. 2012. "Anadromous Fish Distribution." Coho Distribution Geospatial Data. https://www.calfish.org/ProgramsData/Species/AnadromousFishDistribution.aspx. Accessed September 2022.

CalFish. 2011. "Anadromous Fish Distribution." Steelhead Distribution Geospatial Data. https://www.calfish.org/ProgramsData/Species/AnadromousFishDistribution.aspx. Accessed September 2022.

California Department of Fish and Wildlife (CDFW). 2022a. "State and Federally Listed Endangered, Threatened, and Rare plants of California." Last updated July 2022. https://wildlife.ca.gov/Conservation/CESA. Accessed September 2022.

_____. 2022b. "State and Federally Listed Endangered and Threatened Animals of California." Last updated July 2022. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405&inline. Accessed September 2022.

_____. 2022c. "Natural Communities." Last updated July 5, 2022. https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities/List#natural%20communities. Accessed September 2022.

_____. 2022d. "Species of Special Concern." https://www.wildlife.ca.gov/Conservation/SSC. Accessed September 2022.

_____. 2022e. "Fully Protected Animals." https://wildlife.ca.gov/Conservation/Fully-Protected. Accessed September 2022.

_____. 2022f. California Natural Diversity Database (CNDDB) – Commercial Version dated June 1, 2018, RareFind Version 5.2.14. https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx. Accessed September 2022.

_____. 2022g. Biogeographic Information and Observation System (Bios) Version 5.66.18 https://map.dfg.ca.gov/bios/. Accessed September 2022.

California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDB). 2022. Special Animals List. Periodic publication. 66 pp. July 2022. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline. Accessed September 2022.

California Interagency Watershed Mapping Committee (CIWMC): California Department of Water Resources (DWR), California Department of Forestry and Fire Protection (CDF), California Department of Fish and Game (DFG), California State Water Resources Control Board (SWRCB), USDA Forest Service (USFS) Pacific Southwest Region (R5), USDA Natural Resources Conservation Service (NRCS), U.S. Geologic Survey (USGS), USDI Bureau of Reclamation (USBR), USDI Bureau of Land Management (BLM), U.S. Environmental Protection Agency (USEPA) Region IX, Stephen P. Teale Data Center (Teale GIS Solutions Group). 2004. California Interagency Watershed Map of 1999 (Calwater 2.2.1) (Updated 2004). https://www.arcgis.com/home/item.html?id=a6ddb044e7fb4a0396c899862f2a5201. Accessed September 2022.

California Invasive Plant Council (Cal-IPC). 2022. The Cal-IPC Inventory. Berkeley, CA. https://www.cal-ipc.org/plants/inventory/. Accessed September 2022.

California Native Plant Society. 2022. Rare Plant Program. Rare Plant Inventory (online edition, v9-01 1.5). https://www.rareplants.cnps.org. Accessed September 2022.

California State Water Resources Control Board (SWRCB). 2022. Porter-Cologne Water Quality Control Act. Water Code Division 7 and Related Sections (as amended, including Statues 2021). January 2022.

Dayton, J. 2022. Personal communication via phone regarding occurrence of western monarch butterfly in Woods Cove and monarch habitat characteristics with Justin Davilla, Ecologist, EcoSystems West Consulting Group. August 2, 2022.

eBird. 2022. eBird: An Online Database of Bird Distribution and Abundance. Audubon and Cornell Lab of Ornithology. Ithaca, New York. https://ebird.org/map/. Accessed September 2022.

ENTRIX Environmental Consultants (ENTRIX). 2004. Citywide Section 10 Permit Program Habitat Conservation Plan, Existing Resources and Appendices A-C, Project No. 3043812. Prepared for the City of Santa Cruz.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Eyester, Carleton. 2021. Avian Ecologist at Point Blue Conservation Science. Personal communication via email and phone regarding 2021 snowy plover nesting sites, with Erin McGinty, Biologist, EcoSystems West Consulting Group. March 1, 2021.

Griffiths, J., and F. Villablanca. 2015. "Managing Monarch Butterfly Overwintering Groves: Making Room among the Eucalyptus." *California Fish and Game* 101:40–50.

Heady, Paul. 2018. Bat Biologist, Central Coast Bat Research Group. Personal communication via phone, regarding bats expected to occur in coast live oak forest on the north coast, with Erin McGinty, Biologist, EcoSystems West Consulting Group. April 12, 2018.

Hickman, J. C., editor. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, CA.

Hilty, J.A., W.Z. Lidicker Jr., A.M. Merenlender. 2006. *Corridor Ecology, The Science and Practice of Linking Landscapes for Biodiversity Conservation*. Island Press, Washington DC.

Holland, R.F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. State of California, the Resource Agency, Department of Fish and Game. October 1986.

International Union for Conservation of Nature (IUCN). 2022. "Migratory Monarch Butterfly Now Endangered-IUCN Red List." July 21, 2022. https://www.iucn.org/press-release/202207/migratory-monarch-butterfly-now-endangered-iucn-red-list. Accessed September 2022.

Keith, E. 0., R.S. Condit, and B. J. Le Boeuf. 1984. "California Sea Lions Breeding at Ano Nuevo Island, California." *J. Mamm.*65(4):695.

Lidicker, W.Z. 1999. Responses of Mammals to Habitat Edges: An Overview. *Landscape Ecology* 14: 333. https://doi.org/10.1023/A:1008056817939

Lowry, M. S., J. V. Carretta, and K. A. Forney. 2005. P*acific Harbor Seal, Phoca Vitulina Richardsi, Census in California During May–July 2004*. SWFSC Administrative Report LJ-05-06. https://swfsc.noaa.gov/uploadedFiles/Divisions/PRD/Programs/Coastal_Marine_Mammal/Lowry_etal_harborsealsLJ05.pdf. Accessed September 2022.

McGinty, E. 2022. Personal observation of marine mammals including southern sea otter, eastern Pacifica harbor seal and California sea lion in the Santa Cruz Harbor by biologists from 2007 to 2022, EcoSystems West Consulting Group.

McGinty, E. and J. Davilla. 2022. Personal observation of monarch butterfly at Woods Lagoon by biologists from 2007 to 2022, EcoSystems West Consulting Group.

Moyle, P.B., R. M. Quiñones, J. V. Katz and J. Weaver. 2015. *Fish Species of Special Concern in California*. Sacramento: California Department of Fish and Wildlife. https://www.wildlife.ca.gov/Conservation/SSC/Fishes. Accessed September 2022.

Munz, P. A. and D. D. Keck. 1973. *A California Flora and Supplement*. University of California Press, Berkeley, CA.

Nafis, G. 2022. "California Herps – A Guide to the Amphibians and Reptiles of California." http://www.californiaherps.com/. Accessed September 2022.

National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) (= NOAA Fisheries). 1999. Designated Critical Habitat; Central California Coast and Southern

Oregon/Northern California Coasts Coho Salmon, Final Rule and Correction. Federal Register. 50 CFR Part 226. May 5, 1999.

_____. 2005. Endangered and Threatened Species: Designation of Critical Habitat for Seven Evolutionary Significance Units of Pacific Salmon and Steelhead in California. Federal Register. 50 CFR Part 226. September 2, 2005.

_____. 2006. Endangered and Threatened Species: Final Listing Determinations for 10 Distinct Population Segments of West Coast Steelhead; Final Rule. Federal Register. 50 CFR Parts 223 and 224. January 5, 2006.

_____. 2012. Range Extension for Endangered Central California Coast Coho Salmon. Federal Register 77 No. 63, pp. 19552–19562, April 2, 2012. http://www.westcoast.fisheries.noaa.gov/publications/frn/2012/77fr19552.pdf. Accessed September 2022.

_____. 2016a. *2016 5-Year Review: Summary and Evaluation of Central California Coast Coho Salmon*. April 2016.

_____. 2016b. *Viability Assessment for Pacific Salmon and Steelhead Listed Under the Endangered Species Act: Southwest*. Technical Memorandum. July 2016.

Natural Resources Conservation Service (NRCS). 2022. Web Soil Survey. U.S. Department of Agriculture Last modified September 9, 2021. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed September 2022.

Nelson, S. K. 2020. "Marbled Murrelet (*Brachyramphus marmoratus*)", version 1.0. In *Birds of the World* (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.marmur.01. Accessed September 2022.

Neubauer, D. 2013. *Annotated Checklist of the Vascular Plants of Santa Cruz County*, California. Second Edition. California Native Plant Society (CNPS), Santa Cruz County Chapter. 172 pp.

Pacific Gas & Electric Company, ICF International, and H. T. Harvey & Associates. 2015. *Nesting Bird Management Plan: Biologists Guidelines for PG&E Utility Operations, Maintenance, and Projects*. August 2015.

Pelton, E., S. Jepsen, C. Schultz, C. Fallon, and S. H. Black. 2016. *State of the Monarch Butterfly Overwintering Sites in California*. 40+vi pp. Portland, OR: The Xerces Society for Invertebrate Conservation. www.xerces.org. Accessed September 2022.

Penrod, K., R. Hunter, and M. Merrifield. 2001. *Missing Linkages: Restoring Connectivity to the California Landscape, Conference Proceedings*. Cosponsored by California Wilderness Coalition, The Nature Conservancy, U.S. Geological Survey, Center for Reproduction of Endangered Species, and California State Parks.

Phillips, R. L. 1983. *Late Miocene tidal shelf sedimentation, Santa Cruz Mountains, California*. In D.K. La Rue and R.J. Steel, editors. Cenozoic Marine Sedimentation, Pacific Margin, U.S.A. Society of Economic Paleontologists and Mineralogists, Pacific Section, Proceedings, p. 45–61. Los Angeles, California.

Rinkert, Alex. 2018. Bird Records, Santa Cruz Bird Club. Personal communication via email regarding nesting of sensitive bird species, with Erin McGinty, Biologist, EcoSystems West Consulting Group. January 7, 2018, and May 12, 2018.

Rinkert, A. 2022. Bird Records, Santa Cruz Bird Club. Personal communication via email regarding nesting of black swift, with Erin McGinty, Biologist, EcoSystems West Consulting Group. August 18, 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2006. City-Wide Creeks and Wetlands Management Plan. Prepared by the City of Santa Cruz Department of Planning and Community Development. Adopted by City Council February 28, 2006. https://www.cityofsantacruz.com/government/city-departments/planning-and-community-development/long-range-policy-planning/area-plans-and-city-zoning-code/city-wide-creeks-and-wetlands-management-plan. Accessed September 2022.

Santa Cruz, County of. 1992. *Santa Cruz County Urban Forestry Master Plan*. Prepared for the Santa Cruz County Redevelopment Agency. Prepared by Royson, Hanamoto, Alley, and Abey in association with Wolf Mason Associates. Adopted December 1992.

_____. 1994. *1994 General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013a. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Draft Environmental Impact Report*. Santa Cruz, CA.

_____. 2013b. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

_____. 2014. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report Addendum*.

Santa Cruz Puma Project. 2022. Puma Tracker. http://www.santacruzpumas.org/puma-tracker/ Accessed September 2022.

Sawyer, J., T. Keeler-Wolf, and J.M. Evens. 2009. *A Manual of California Vegetation*. Second Edition. California Native Plant Society, Sacramento, California.

Science and Collaboration for Connected Wildlands (SCCW). 2014. "Landscape Blocks for the California Bay Area Linkage Network. Critical Linkages: Bay Area and Beyond. Fair Oaks, CA." BIOS Viewer by CDFW. Accessed September 2022.

Seal Conservancy. 2017. Harbor Seal Facts by Seal Conservancy. http://sealconservancy.org/documents/Harbor_Seal_Facts.pdf. Accessed September 2022.

Shuford, W. D., and Gardali, T., editors. 2008. C*alifornia Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

Spence, B.C. 2016. North-Central Coast California Recovery Domain, pp. 32-82, in T.H. Williams, B.C. Spence, D.A. Boughton, R.C. Johnson, L.G. Crozier, N.J. Mantua, M.R. O'Farrell, and S.T. Lindley. Viability assessment for Pacific salmon and steelhead Listed under the Endangered Species Act: Southwest. U.S. Department of Commerce, NOAA Technical Memorandum NMFS-SWFSC-564. July 2016.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California*. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

Stebbins, Robert C., and Samuel M. McGinnis. 2012. *Field Guide to Amphibians and Reptiles of California: Revised Edition* (California Natural History Guides). University of California Press.

Steiner, Chad. 2022. Wildlife Biologist. Personal communication via text, regarding occurrence of western pond turtle and Santa Cruz black salamander, with Erin McGinty, biologist, EcoSystems West Consulting Group. September 8, 2022.

Suddjian, D. 2013. *The Checklist of Birds of Santa Cruz County, California*. Published by the Santa Cruz Bird Club. Updated December 28, 2013. http://scbirdingguide.org/checklist-2013.pdf. Accessed September 2022.

Thomas, J.H. 1960. *Flora of the Santa Cruz Mountains of California*. Stanford University Press, Stanford, California. 434 pp.

Thompson, C.P., A.N. Wright, and H.B. Shaffer. 2016. *California Amphibian and Reptile Species of Special Concern*. University of California Press. Oakland, CA.

Tibor, D.P., editor. 2001. *Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society Special Publication No. 1*. 6th edition. California Native Plant Society, Sacramento, CA.

U.S. Army Corps of Engineers (USACE). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*. Eds. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center. May 2010.

U.S. Fish and Wildlife Service (USFWS). 1977. Endangered and Threatened Wildlife and Plants; Determination that the Southern Sea Otter is a Threatened Species. Federal Register 50 CFR Part 17, Volume 42, No. 10, January 14, 1977. https://www.govinfo.gov/content/pkg/FR-1977-01-14/pdf/FR-1977-01-14.pdf#page=1. Accessed September 2022.

_____. 1993. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the Pacific Coast Population of Western Snowy Plover, Final Rule. Federal Register 50 CFR Part 17, Volume 58, No. 42, pp. 12864–12874, March 5, 1993. https://ecos.fws.gov/docs/federal_register/fr2236.pdf. Accessed September 2022.

_____. 1994. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Tidewater Goby. Federal Register 50 CFR Part 17, Volume 59, No. 24, pp. 5494–5499, February 4, 1994. http://ecos.fws.gov/docs/federal_register/fr2517.pdf. Accessed September 2022.

_____. 1999. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Pacific Coast Population of Western Snowy Plover, Final Rule. Federal Register 50 CFR Part

17, Volume 64, No. 234, pp. 68508–68544, December 7, 1999. https://www.gpo.gov/fdsys/pkg/FR-1999-12-07/pdf/99-31357.pdf#page=1. Accessed September 2022.

_____. 2000. Endangered and Threatened Wildlife and Plants; Threatened Status for the Holocarpha macradenia (Santa Cruz tarplant), Final Rule. Federal Register 50 CFR Part 17, Volume 65, No. 54, pp. 14898-14909, March 20, 2000. https://www.federalregister.gov/documents/2000/03/20/00-6834/endangered-and-threatened-wildlife-and-plants-threatened-status-for-holocarpha-macradenia-santa-cruz. Accessed September 2022.

_____. 2005. *Recovery Plan for the Tidewater Goby, (*Eucyclogobius newberryi*)*. U.S. Fish and Wildlife Service, Pacific Region, Portland, Oregon. vi + 199 pp. http://ecos.fws.gov/docs/recovery_plan/051207.pdf. Accessed September 2022.

_____. 2008. *Birds of Conservation Concern 2008*. United States Department of Interior, Fish and Wildlife Service. Division of Migratory Bird Management. Arlington, Virginia. 85pp. https://www.fws.gov/sites/default/files/documents/birds-of-conservation-concern-2021.pdf. Accessed September 2022.

_____. 2009. *A System for Mapping Riparian Areas in the Western United States*. Division of Habitat and Resource Conservation Branch of Resource and Mapping Support, Arlington, VA.

_____. 2013. Designation of Critical Habitat for Tidewater Goby; Final Rule. Federal Register 78 No. 25, pp. 8745-8819, February 6, 2013. https://www.gpo.gov/fdsys/pkg/FR-2013-02-06/pdf/2013-02057.pdf. Accessed September 2022.

_____. 2020. Endangered and Threatened Wildlife and Plants; 12-Month Finding for the Monarch Butterfly. Federal Register 50 CFR Part 17, Volume 85, No. 243, pp. 81813–81822. December 17, 2020. https://www.govinfo.gov/content/pkg/FR-2020-12-17/pdf/2020-27523.pdf#page=1. Accessed September 2022.

_____. 2022a. "Listed Species Believed to or Known to Occur in California." https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=CA&stateName=California&statusCategory=Listed. Accessed September 2022.

_____. 2022b. "Species Proposed for Listing Believed to or Known to Occur in California." https://ecos.fws.gov/ecp/report/species-listings-by-state?stateAbbrev=CA&stateName=California&statusCategory=Proposed%20for%20Listing. Accessed September 2022.

_____. 2022c. "Candidate Species Believed to or Known to Occur in California." https://ecos.fws.gov/ecp/report/species-listings-by-state-totals?statusCategory=Candidate%20for%20Listing. Accessed September 2022.

_____. 2022d. National Wetlands Inventory. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/. Accessed September 2022.

_____. 2022e. Endangered and Threatened Wildlife and Plants; Review of Species that are Candidates for Listing as Endangered or Threatened; Annual Notification of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions. Federal Register 50 CFR Part 17, Volume 87, No. 85, pp. 26152-26178, May 3, 2022.

https://www.govinfo.gov/content/pkg/FR-2022-05-03/pdf/2022-09376.pdf#page=1. Accessed September 2022.

Vanderhoof, M., and Allen, S. 2005. *Harbor Seal Monitoring at Point Reyes National Seashore and Golden Gate National Recreation Area*. 2005 Annual Report. http://www.sfnps.org/download_product/1331/0. Accessed September 2022.

Western Bat Working Group (WBWG). 2017. Western Bat Species: Regional Priority Matrix http://wbwg.org/matrices/species-matrix/ and Western Bat Species: Species Accounts http://wbwg.org/western-bat-species/. Accessed September 2022.

Wheeler, B. 2001. The Biogeography of California Sea Lion *(Zalophus californianus)*. San Francisco State University, Department of Geography. http://online.sfsu.edu/bholzman/courses/Fall01%20projects/Californiasealion.htm. Accessed September 2022.

The Xerces Society of Invertebrate Conservation (Xerces Society). 2022a. Xerces Society Western Monarch Overwintering Sites Database. https://xerces.org/monarchs/. Accessed September 2022.

_____. 2022b. Western Monarch Count. Western Monarch Thanksgiving Count and New Year's Count Data, 1997–2021. www.westernmonarchcount.org. Accessed September 2022.

Section 3.4 Cultural Resources

Glassow, Michael A., Lynn. H Gamble, Jennifer E. Perry, and Glenn S. Russell. 2007. "Prehistory of the Northern California Bight and the Adjacent Transverse Ranges." In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, AltaMira Press, Lanham, MD.

Jones, Terry L., Nathan E. Stevens, Deborah A. Jones, Richard T. Fitzgerald, and Mark G. Hylkema. 2007. "The Central Coast: A Midlatitude Milieu." In *California Prehistory: Colonization, Culture, and Complexity*, edited by Terry L. Jones and Kathryn A. Klar, pp. 125–146. AltaMira Press, Lanham, MD.

National Park Service. 1983. "Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines." Washington, DC. https://www.nps.gov/history/local-law/arch_stnds_0.htm. Accessed September 2022.

_____. 1997. National Register Bulletin: How to Apply the National Register Criteria for Evaluation. Washington, D.C. National Park Service.

Santa Cruz, City of. 2011. *City of Santa Cruz General Plan 2030 Draft Environmental Impact Report: Section 4.9 Cultural Resources.* SC# 2009032007. Santa Cruz, California. September 2011.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2014. *Monterey Bay Sanctuary Scenic Trail Network Master Plan*. Santa Cruz, CA. February 6, 2014.

Section 3.5 Geology and Soils

Boessnecker, R.W., F.A. Perry, and J.G. Schmitt. 2014. "Comparative Taphonomy, Taphofacies, and Bonebeds of the Mio-Pliocene Purisima Formation, Central California: Strong Physical Control on Marine Vertebrate Preservation in Shallow Marine Settings." *PLOSOne.* Volume 9, e91419.

Brabb, E.E. 1997. Geologic Map of Santa Cruz County, California. [map.] U.S. Geological Survey, Open-File Report 97-489, scale 1:62,500.

Bradley, W.C. and W.O. Addicott. 1968. "Age of First Marine Terrace near Santa Cruz, California." *Geological Society of America Bulletin*. Volume 79, pp. 1203–1210.

California Division of Mines and Geology (CDMG). 1997. *Fault-Rupture Hazard Zones in California: Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zone Maps*. Special publication, California Department of Conservation. Revised by Earl W. Hart and Bryant. Sacramento, CA.

California Department of Water Resources (DWR). 2014. *Public Update for Drought Response: Groundwater Basins with Potential Water Shortages, Gaps in Groundwater Monitoring, Monitoring of Land Subsidence, and Agricultural Land Fallowing*. Natural Resource Agency. Sacramento, CA. November 2014.

California Geological Survey (CGS). 2002. *California Geomorphic Provinces – Note 36*. Sacramento, CA.

_____. 2010. "Fault Activity Map of California (2010)." [GIS dataset]. California Geologic Survey. Department of Conservation Last updated 2015. http://maps.conservation.ca.gov/cgs/fam/ Accessed September 2022.

Clark, Joseph C. 1981. "Stratigraphy, Paleontology, and Geology of the Central Santa Cruz Mountains, California Coast Ranges." Geological Survey Professional Paper 1168. U.S. Department of the Interior. Washington, DC. 47–51.

Global Rangelands. 2018. "The Twelve Soil Orders." https://globalrangelands.org/topics/rangeland-ecology/twelve-soil-orders#Mollisols. Accessed September 2022.

Jefferson, G.T. 2010. "A Catalogue of late Quaternary Vertebrates from California." In *Natural History Museum of Los Angeles County Technical Report*. Volume 7, pp. 5–172.

Natural Resources Conservation Service (NRCS). 2018. "Web Soil Survey." U.S. Department of Agriculture.

Pacific Crest Engineering, Inc. 2021. *Geotechnical Investigation Report: Monterey Bay Sanctuary Scenic Trail Segments 8 and 9*. September 2021.

_____. 2022. Technical Memorandum. June 2022.

Paleobiology Database (PBDB). 2022. The Paleobiology Database, http://paleobiodb.org/. Accessed September 2022.

Roberts, Sebastian, Andrew D. Baron, Earl E. Brabb, and Richard J. Pike. 1998. Digital compilation of "Preliminary Map of Landslide Deposits in Santa Cruz County, California, By Cooper-Clark and Associates, 1975": A Digital Map Database: U.S. Geological Survey Open-File Report 98792. http://pubs.usgs.gov/of/1998/of98-792/. Accessed September 2022.

Santa Cruz, City of. *City of Santa Cruz General Plan 2030 Draft Environmental Impact Report: Section 4.10 Geology and Soils.* SC# 2009032007. Santa Cruz, California. September 2011.

_____. 2017. Local Hazard Mitigation Plan Five Year Update 2017–2022. http://www.cityofsantacruz.com/home/showdocument?id=62828.

Santa Cruz, County. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

Society of Vertebrate Paleontology (SVP). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*.

University of California Museum of Paleontology (UCMP). 2022. UCMP online database specimen search portal. http://ucmpdb.berkeley.edu/. Accessed September 2022.

U.S. Geologic Survey (USGS). 2017 "Earthquake Glossary: Liquefaction." USFS Earthquake Hazards Program. https://earthquake.usgs.gov/learn/glossary/?term=liquefaction. Accessed September 2022.

Wagner, D.L., H.G. Greene, G.J. Saucedo, and C.L. Pridmore. 2002. Geologic map of the Monterey 30' x 60' quadrangle and adjacent areas, California. [map.] California Geological Survey, Regional Geologic Map Series Map No. 1, scale 1:100,000.

Woodring, W.P., M.N. Bramlette, and W.S.W. Kew. 1946. *Geology and Paleontology of Palos Verdes Hills, California*. United States Geological Survey Professional Paper. Number 207, pp. 1–145.

Section 3.6 Greenhouse Gas Emissions/Climate Change

Association of Monterey Bay Area Governments (AMBAG). 2018. *Moving Forward Monterey Bay 2040, 2040 Metropolitan Transportation Plan and the Sustainable Communities Strategy Seaside, CA*. June 2018.

_____. 2022. 2045 *Metropolitan Transportation Plan/Sustainable Communities Strategy and Regional Transportation Plans for Monterey, San Benito and Santa Cruz Counties Final Environmental Impact Report* (SCH #2020010204). Seaside, CA. June 2022.

Bay Area Air Quality Management District (BAAQMD). 2022. *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans*. April.

California Air Pollution Control Officers Association (CAPCOA). 2008. *CEQA and Climate Change, Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. Sacramento, CA. January 2008.

_____. 2022a. *California Emissions Estimator Model Users Guide*, Version 2022.1. April.

_____. 2022b. Personal communication via email, regarding silt content error message with Sharon Toland, Project Manager, Harris & Associates and CalEEMod technical staff (caleemod@airquality.org). July 14, 2022.

California Air Resources Board (CARB). 2008. *Climate Change Scoping Plan, A Framework for Change*. Sacramento, CA. December 2008.

_____. 2017. *California's 2017 Climate Change Scoping Plan*. Sacramento, CA. November 2017.

_____. 2021. *California Greenhouse Gas Emissions for 2000 to 2019, Trends of Emissions and Other Indicators*. July 28.

_____. 2022. *Draft 2022 Scoping Plan Update*. Sacramento, CA. May 10, 2022.

California Department of Water Resources (DWR). 2016. *The National Flood Insurance Program in California, Quick Guide Coastal Appendix: Planning for Sea Level Rise*. Sacramento, CA. October 2016.

California Natural Resources Agency (CNRA). 2009. *California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.* Sacramento, CA.

_____. 2021. *Climate Adaptation Strategy*. Sacramento, CA. 2021.

Intergovernmental Panel on Climate Change (IPCC). 2013. "Summary for Policymakers." *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* Geneva, Switzerland.

_____. 2014. "Summary for Policymakers." *Climate Change 2014: Mitigation of Climate Change.* Geneva, Switzerland.

National Oceanic and Atmospheric Administration (NOAA). 2022. *Annual Greenhouse Gas Index*. http://www.esrl.noaa.gov/gmd/aggi/. Accessed September 2022.

Natural Resources Defense Council (NRDC). 2017. *Fact Sheet 17-04-A - EPA's Endangerment Finding: The Legal and Scientific Foundation for Climate Action*. May.

Nature Conservancy. 2022. Coastal Resiliency Program Mapping Portal. https://maps.coastalresilience.org/. Accessed September 2022.

Office of the Attorney General (OAG). 2022. "Climate Change Impacts in California." Department of Justice. Sacramento, CA. July 13, 2022. https://oag.ca.gov/environment/impact. Accessed September 2022.

Santa Cruz, City of. 2012. *Climate Action Plan*. Santa Cruz, CA. June 2012.

_____. 2022. *Public Review Draft 2030 Climate Action Plan*. Santa Cruz, CA. June 2022.

Santa Cruz, County of. 2013. *County of Santa Cruz Climate Action Strategy*. Santa Cruz, CA. February 26, 2013.

_____. 2020. *Climate Action Strategy Annual Report*. April 28.

U.S. Department of Agriculture (USDA). 2022. i-Tree Planting Calculator. https://planting.itreetools.org/. Accessed September 2022.

U.S. Environmental Protection Agency (USEPA). 2022a. Overview of Greenhouse Gas Emissions – Carbon Dioxide Emissions. Last updated May 16, 2022. https://www.epa.gov/ghgemissions/overview-greenhouse-gases#main-content. Accessed September 2022.

_____. 2022b. Global Greenhouse Gas Emissions Data. Last updated February 25, 2022. https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data. Accessed September 2022.

Section 3.7 Hazards and Hazardous Materials

AMEC Geomatrix, Inc. (AMEC Geomatrix). 2009. *Phase II Investigations and Human Health Risk Assessment for Arsenic, Santa Cruz Branch Line, Santa Cruz and Monterey Counties, California.* Oakland, CA. December 2009.

California Department of Conservation, Division of Oil, Gas and Geothermal Resources (DOGGR). 2022. "Division of Oil, Gas & Geothermal Resources – Well Finder." [tabular data]. https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-122.03098/36.97425/14. Accessed September 2022.

California Department of Forestry and Fire Protection (CAL FIRE). 2007. "Santa Cruz County FHSZ Map."[GIS dataset]. http://www.fire.ca.gov/fire_prevention/fhsz_maps_santacruz. Accessed September 2022.

_____. 2008. The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Fire Hazard Severity Zone Maps. https://egis.fire.ca.gov/FHSZ/. Accessed September 2022.

_____. 2022a. "About CAL FIRE." "California Department of Forestry and Fire." https://www.fire.ca.gov/about-us/. Accessed September 2022.

_____. 2022b. "CAL FIRE AT A GLANCE." *California Department of Forestry & Fire Protection.* May 2022. https://web.archive.org/web/20220811194503/https:/www.fire.ca.gov/media/rb3b0q3v/glance.pdf. Accessed September 2022.

Geomatrix Consultants, Inc. 1997. *Preliminary Site Assessment Davenport and Santa Cruz Branch Lines, Santa Cruz and Monterey Counties, California*. Prepared for Santa Cruz County Regional Transportation Commission (RTP). Santa Cruz, CA. March 1997.

Governor's Office of Emergency Services (CalOES). 2006. California Implementation Guidelines for the National Incident Management System. Prepared for the California Emergency Management Community. Sacramento, CA. September 2006.

_____. 2014. *California Fire Service and Rescue Emergency Mutual Aid System Mutual Aid Plan*. Sacramento, CA. December 2014.

_____. 2017. *State of California Emergency Plan.* Sacramento, CA. October 1, 2017.

Santa Cruz, City of. 2018. *2018–2023 Local Hazard Mitigation Plan*. https://www.cityofsantacruz.com/home/showpublisheddocument/77162/637000812150570000. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

_____. 2015. *Local Hazard Mitigation Plan 2015–2020*. Santa Cruz, CA. September 2015.

_____. 2022. "Hazardous Materials and Waste." Environmental Health. https://scceh.com/NewHome/Programs/HazardousMaterialsWaste.aspx. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2012. *Santa Cruz Branch Rail Line Alignment and Bridge Evaluation & Repair/Rehabilitation or Replacement Recommendation Report*. August 31, 2012.

_____. 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

U.S. Environmental Protection Agency (USEPA). 2021. "Summary of the Federal Insecticide, Fungicide, and Rodenticide Act." Last modified September 28, 2021. https://www.epa.gov/laws-regulations/summary-federal-insecticide-fungicide-and-rodenticide-act. Accessed September 2022.

_____. 2022. "Learn About Asbestos." Last modified April 14, 2022. https://www.epa.gov/asbestos/learn-about-asbestos#asbestos. Accessed September 2022.

Weber, Hayes & Associates (WHA). 2022. Initial Site Assessment Coastal Rail Trail project Segments 8 & 9. June 16, 2022.

Section 3.8 Hydrology and Water Quality

Balance Hydrologics. 2022. *Location Hydraulic Study for Rail Trail Segments 8 & 9*. April.

California Groundwater Bulletin 118. 2014. Hydrologic Region Central Coast West Santa Cruz Terrace Groundwater Basin. February.

Central Coast Regional Water Quality Control Board (CCRWQCB). 2019. *Water Quality Control Plan for the Central Coast Basin, June 2019 Edition*. California Environmental Protection Agency. Sacramento, CA. June.

California Department of Water Resources (DWR). 2009. *California Water Plan Update 2009 Volume 3 – Regional Reports, Central Coast Integrated Water Management*. Bulletin 160-09. Sacramento, CA.

Groundwater Exchange. 2022. "West Santa Cruz Terrace." https://groundwaterexchange.org/basin/west-santa-cruz-terrace/. Accessed September 2022.

Jennings, Charles W., and Rudolph G. Strand (compilers). 1958. Santa Cruz Sheet of Geologic Map of California. California Division of Mines and Geology (CDMG). Scale 1:250,000.

Santa Cruz Mid-County Groundwater Agency (MCGA). 2019. *Santa Cruz Mid-County Groundwater Sustainability Plan*. November.

Santa Cruz, City of. 2017. *Local Hazard Mitigation Plan Five Year Update 2017–2022*. Santa Cruz, CA.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

Western Regional Climate Center (WRCC). 2022. Period of Record Monthly Climate Summary, Santa Cruz, California. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7916. Accessed September 2022.

Section 3.9 Land Use and Planning

California Department of Finance. 2022. "E-5 Population and Housing Estimates for Cities, Counties, and the State." https://dof.ca.gov/forecasting/demographics/estimates/. Accessed September 2022.

California State Parks and Recreation Department (State Parks). 1988. *Twin Lakes State Beach General Plan.* Sacramento, CA. October 1988.

_____. 2010. *California State Parks General Planning Handbook*. https://www.parks.ca.gov/pages/21299/files/planning_handbook_april_2010.pdf. Accessed September 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

_____. 2022. *Santa Cruz County Sustainability Update*. https://sustainability-update-sccgis.opendata.arcgis.com/pages/documents. Accessed September 2022.

Santa Cruz County, Regional Transportation Commission (RTC). 2014. *Monterey Bay Sanctuary Scenic Trail Network Master Plan*. Santa Cruz, CA. February 6, 2014.

U.S. Census Bureau. 2020. "QuickFacts for Live Oak, California." https://www.census.gov/quickfacts/fact/table/liveoakcitycalifornia/RHI725221. Accessed September 2022.

Section 3.10 Noise

California Department of Transportation (Caltrans). 2013. *Transportation and Construction Vibration Guidance Manual*. Sacramento, CA. September 2013.

California Governor's Office of Planning and Research (OPR). 2017. *State of California 2017 General Plan Guidelines*.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*. Office of Planning and Environment. Washington, DC. September 2018.

Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide*. Prepared by U.S. Department of Transportation Research and Innovative Technology Administration. Prepared for U.S. Department of Transportation Federal Highway Administration, Office of Natural and Human Environment. Washington, DC. January 2006.

Santa Cruz, City of. 2019. *City of Santa Cruz General Plan*. As amended through October 2019.

_____. 2022. Santa Cruz Municipal Code. Current through Ordinance 2022-10, passed June 14, 2022.

Santa Cruz, County of. 2020. 1994 General Plan/Local Coastal Program, Chapter 9: Noise. Updated February 2020.

_____. 2021. Santa Cruz County Municipal Code. Current through Ordinance 5383, passed October 19, 2021.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

Section 3.11 Public Safety and Services

Central Fire District (CFD). 2020. *Central & Aptos/La Selva Fire Protection Districts Annual Report 2020*. https://www.centralfiresc.org/DocumentCenter/View/2546/2020-Annual-Report-for-Central-FPD--Aptos-FPD-PDF?bidId=. Accessed September 2022.

Fish, Stefan. 2018. Sargent, Santa Cruz County Sheriff's Department, North Coast Sheriff's Service Center. Telephone conversation regarding sheriff services with Wendy Young Environmental Specialist, Harris & Associates on May 8, 2018.

Hop, Randall, and Nick Baldridge. 2022. Sergeant & Lieutenant of the Santa Cruz County Sheriff's Office Community Policy Division. Conversation regarding police response services with representatives from Harris & Associates and Rincon Consultants, Inc. on May 18, 2022.

Mack, Marco. 2022. Deputy Fire Marshal, CMF CBO, Central Fire District. Conversation regarding fire response services with representatives from Harris & Associates and Rincon Consultants, Inc. on May 12, 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2017. *City of Santa Cruz Active Transportation Plan*. February 2017. https://www.cityofsantacruz.com/home/showpublisheddocument/60966/636353003776970000. Accessed September 2022.

_____. 2022a. "Fire Department About." https://www.cityofsantacruz.com/government/city-departments/fire-department/about. Accessed September 2022.

_____. 2022b. "About the Santa Cruz Police Department." https://www.cityofsantacruz.com/government/city-departments/police/about-the-scpd. Accessed September 2022.

_____. 2022c. Park Map. https://www.cityofsantacruz.com/government/city-departments/parks-recreation/parks-beaches-open-spaces/parks/park-map. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

_____. 2012. *HEALTH, Santa Cruz County*. Public Health Department. Santa Cruz, CA. January 2013.

_____. 2018. *Santa Cruz County Parks Strategic Plan*. March 8, 2018. https://www.scparks.com/Portals/12/pdfs/strategic%20plan/SantaCruzCountyParksStrategicPlan_PublicReviewDraft.pdf. Accessed September 2022.

_____. 2022a. *2045 Regional Transportation Plan*. https://sccrtc.org/wp-content/uploads/2022/02/Chapter%202%20Transportation%20Network.pdf. Accessed September 2022.

_____. 2022b. County Parks Park Finder. https://www.scparks.com/Home/ExploreOurParksBeaches/CountyParksParkFinder.aspx. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

Santa Cruz Public Libraries. 2013. *Santa Cruz Public Libraries Facilities Master Plan 2014–2023*. March 2013. https://www.santacruzpl.org/files/library_administration/documents/SCPLFacilitiesMasterPlan2013.pdf. Accessed September 2022.

Santa Cruz Regional 9-1-1 (SCR911). 2017. *Santa Cruz Regional 9-1-1 Annual Report*. Santa Cruz, CA.

Section 3.12 Transportation

Association of Monterey Bay Area Governments (AMBAG). 2022. *2045 Metropolitan Transportation Plan/Sustainable Communities Strategy*. 2022. https://www.ambag.org/plans/2045-metropolitan-transportation-plan-sustainable-communities-strategy. Accessed September 2022.

California Department of Transportation (Caltrans). 2020a. *Transportation Analysis Framework.* https://dot.ca.gov/-/media/dot-media/programs/sustainability/documents/2020-09-10-1st-edition-taf-fnl-a11y-new-.pdf. Accessed September 2022.

_____. 2020b. *Transportation Impact Study Guide*. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf. Accessed September 2022.

Mack, Marco. 2022. Deputy Fire Marshal, CMF CBO, Central Fire District. Conversation regarding fire response services with representatives from Harris & Associates and Rincon Consultants, Inc. on May 12, 2022.

Office of Planning and Research (OPR). 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed September 2022.

Rincon Consultants, Inc. 2022. *Coastal Rail Trail Segments 8 and 9 Traffic Technical Memorandum*. August 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2017. *City of Santa Cruz Active Transportation Plan*. February 2017. https://www.cityofsantacruz.com/home/showpublisheddocument/60966/636353003776970000. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994.

https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

_____. 2020. *Analyzing Vehicle Miles Traveled for CEQA Compliance*. https://www.sccoplanning.com/Portals/2/County/Planning/policy/Transportation/SantaCruzCounty_VMTGuidelines_051121.pdf. Accessed September 2022.

_____. 2022. *Active Transportation Plan*. https://ecoact.org/wp-content/uploads/2022/05/SCC_ATP_Final_web.pdf. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

_____. 2019. *Unified Corridor Investment Study*. https://www.sccrtc.org/wp-content/uploads/2019/01/UCS-Final-January2019.pdf. Accessed September 2022.

_____. 2022a. *2045 Regional Transportation Plan*. https://sccrtc.org/funding-planning/long-range-plans/2045-regional-transportation-plan/. Accessed September 2022.

_____. 2022b. Signed Bicycle Routes & Other Bikeways of Santa Cruz County. https://sccrtc.maps.arcgis.com/apps/StoryMapBasic/index.html?appid=dc90c3b75f3b4bd191277f7099cca3ff&extent=-122.2023,36.8662,-121.7773,37.0681. Accessed September 2022.

Santa Cruz Metropolitan Transit District (METRO). 2022. System Map. http://www.scmtd.com/en/routes/schedule/map/202240/71. Accessed September 2022.

University of California at Berkley (UC Berkley). 2022. Transportation Injury Mapping System. SWITRS GIS Map. https://tims.berkeley.edu/tools/gismap/. Accessed September 2022.

Section 3.13 Tribal Cultural Resources

Field, Les W., and Alan Leventhal. 2003. "'What Must It Have Been Like!': Critical Considerations of Precontact Ohlone Cosmology as Interpreted through Central California Ethnohistory." *Wicazo SA Review* 18(2): 95–126.

Jones, Barbara L. 2010. "Mythic Implications of Faunal Assemblages from Three Ohlone Sites." Master's Thesis, Department of Anthropology, San Francisco State University, San Francisco, California.

Jones, Doug. 2015. "Ritual and Religion in the Ohlone Cultural Area of Central California." Master's Thesis, Department of Anthropology, San José State University, San José, California.

Kroeber, Alfred J. 1925. *Handbook of the Indians of California*. Bulletin 78, Bureau of American Ethnology, Smithsonian Institution. Government Printing Office, Washington, D.C. Reprinted 1976 by Dover Publications, Inc., New York.

Leventhal, Alan, and Diane DiGiuseppe. 2009. "Analysis of the Stone, Bone and Shell Artifacts from CA-SCL-869." In *Final Report on the Burial and Archaeological Data Recovery Program Conducted on a Portion of a Middle Period Ohlone Indian Cemetery, Katwáš Ketneyma Waréeptak (The Four Matriarchs Site) CA-SCL-869, Located at 5912 Cahalan Avenue, Fire Station # 12 San José, Santa Clara County, California.* Ohlone Families Consulting Services. Submitted to City of San José Department of Public Works.

Milliken, Randall, Laurence Shoup, and Beverly Ortiz. 2009. "Ohlone/Costanoan Indians of the San Francisco Peninsula and their Neighbors, Yesterday and Today." *Government Documents and Publications* 6.

Schick, Grant W. 1994. "The Ohlone and the Oak Woodlands: Cultural Adaptation in the Santa Clara Valley, Research Manuscript No. 4." Santa Clara University. Santa Clara, California.

Skowronek, Russell K. 1998. "Sifting the Evidence: Perceptions of Life at the Ohlone (Costanoan) Missions of Alta California." *Ethnohistory* 45: 675–708.

Section 3.14 Utilities and Service Systems

CalRecycle. 2019a. Solid Waste Information System Facility/Site Activity Details: City of Santa Cruz Resource Recovery Facility. (44-AA-0001). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1394?siteID=3417. Accessed September 2022.

CalRecycle. 2019b. Solid Waste Information System Facility/Site Activity Details: Buena Vista Drive Sanitary Landfill (44-AA-0004). https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1397?siteID=3420. Accessed September 2022.

CalRecycle. 2019c. SWIS Facility/Site Activity Details. Ben Lomond Transfer Station (44-AA-0005) https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1398?siteID=3421. Accessed September 2022.

Central Coast Community Energy. 2022. "Unifying the Central Coast." https://3cenergy.org/unify-central-coast/. Accessed September 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2017. "Know Your Water Service. A Guide to the Santa Cruz Water Department." https://www.cityofsantacruz.com/home/showpublisheddocument/63146/636906552572530000. Accessed September 2022.

_____. 2021. "City of Santa Cruz Urban Water Management Plan." https://www.cityofsantacruz.com/home/showpublisheddocument/87122/637739611535800000. Accessed September 2022.

_____. 2022a. "Where Does Our Water Come From?" https://www.cityofsantacruz.com/government/city-departments/water/where-does-our-water-come-from. Accessed September 2022.

_____. 2022b. "Wastewater System." https://www.cityofsantacruz.com/government/city-departments/public-works/wastewater-treatment-facility. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

_____. 2022. "Recycling and Solid Trash." http://dpw.co.santa-cruz.ca.us/Home/RecyclingSolidWaste.aspx. Accessed September 2022.

Santa Cruz County Sanitation District (SCCSD). 2019. *Basic Financial Statements and Independent Auditor's Reports*. https://www.co.santa-cruz.ca.us/Portals/0/County/auditor/sanitation_district_audit_2019/sanitation_district_audit_2019.pdf. Accessed September 2022.

_____. 2021. *Sewer System Management Plan Audit*. https://dpw.co.santa-cruz.ca.us/Portals/19/pdfs/Sanitation/pdf/SSMP_AUDIT_2021_FINAL%20SIGNED.pdf?ver=yjBLQDpYY5_Uejt-SY6oKw%3D%3D#:~:text=SCCSD%20maintains%20234%20miles%20of,and%2035%20sewer%20pump%20stations. Accessed September 2022.

Schaaf and Wheeler Consulting Civil Engineers (Schaaf and Wheeler). 2013. *Storm Drain Facilities Master Plan*. Santa Cruz County. https://dpw.co.santa-cruz.ca.us/Portals/19/pdfs/stormwater/Master%20Plans/2013%20Master%20Plan%20Report.pdf?ver=Bio8BKbkYlv11mxwWuKh_A%3d%3d&timestamp=1639521593169. Accessed September 2022.

State Water Resources Control Board (SWRCB). 2022. Land Disposal Program. Disposal Facilities Authorized to Accept Treated Wood Waste. https://www.waterboards.ca.gov/water_issues/programs/land_disposal/treated_wood_waste.html. Accessed September 2022.

Steel. 2022. Project Manager, Capital Projects, County of Santa Cruz Community Development and Infrastructure Department. Telephone conversation. August 4, 2022.

Section 3.15 Effects Found to be Less than Significant

California Department of Fire (CAL FIRE). 2008. The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Fire Hazard Severity Zone Maps. https://egis.fire.ca.gov/FHSZ/. Accessed September 2022.

Mack, Marco. 2022. Deputy Fire Marshal, CMF CBO, Central Fire District. Conversation regarding fire response services with representatives from Harris & Associates and Rincon Consultants, Inc. on May 12, 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2017. *City of Santa Cruz Active Transportation Plan*. February 2017. https://www.cityofsantacruz.com/home/showpublisheddocument/60966/636353003776970000. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

_____. 2022. *Active Transportation Plan*. https://ecoact.org/wp-content/uploads/2022/05/SCC_ATP_Final_web.pdf. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

_____. 2022. *2045 Regional Transportation Plan*. https://sccrtc.org/wp-content/uploads/2022/02/Chapter%202%20Transportation%20Network.pdf. Accessed September 2022.

Pacific Crest Engineering, Inc. 2022. *Technical Memorandum*. June.

Chapter 4 Other CEQA-Required Discussions

California Geological Survey. 2012. Aggregate Sustainability in California.

California Department of Fire (CAL FIRE). 2008. The California Department of Forestry and Fire Protection's Fire and Resource Assessment Program Fire Hazard Severity Zone Maps. https://egis.fire.ca.gov/FHSZ/. Accessed September 2022.

Mack, Marco. 2022. Deputy Fire Marshal, CMF CBO, Central Fire District. Conversation regarding fire response services with representatives from Harris & Associates and Rincon Consultants, Inc. on May 12, 2022.

Santa Cruz, City of. 2012. *General Plan 2030*. Adopted June 2012, Revised October 2019. https://www.cityofsantacruz.com/home/showpublisheddocument/71130/637453677885300000. Accessed September 2022.

_____. 2017. *City of Santa Cruz Active Transportation Plan*. February 2017. https://www.cityofsantacruz.com/home/showpublisheddocument/60966/636353003776970000. Accessed September 2022.

_____. 2021. *City of Santa Cruz Urban Water Management Plan*. https://www.cityofsantacruz.com/home/showpublisheddocument/87122/637739611535800000. Accessed September 2022.

Santa Cruz, County of. 1994. *General Plan and Local Coastal Program for the County of Santa Cruz, California*. December 1994. https://www.sccoplanning.com/planninghome/sustainabilityplanning/generalplan.aspx. Accessed September 2022.

Santa Cruz County Regional Transportation Commission (RTC). 2013. *Monterey Bay Sanctuary Scenic Trail Network Master Plan Final Environmental Impact Report*. Santa Cruz, CA. November 7, 2013.

_____. 2022. *Active Transportation Plan*. https://ecoact.org/wp-content/uploads/2022/05/SCC_ATP_Final_web.pdf. Accessed September 2022.

Weber, Hayes & Associates (WHA). 2022. *Initial Site Assessment Coastal Rail Trail project Segments 8 & 9*. June 16, 2022.

Wolfman, PE, Steve. 2022. Associate Civil Engineer, City of Santa Cruz Public Works Department. Email confirming the average daily flow and remaining capacity of the Santa Cruz Wastewater Treatment Facility. September 12, 2022.

Chapter 5 Project Alternatives

Santa Cruz County Regional Transportation Commission (RTC). 2015. *Rail Transit Feasibility Study*.

_____. 2019. *Final Unified Corridor Investment Study*. January 2019. https://www.sccrtc.org/wp-content/uploads/2019/01/UCS-Final-January2019.pdf. Accessed September 2022.

_____. 2021. *Transit Corridor Alternatives Analysis*.

Appendix A.

Design Plans for Coastal Rail Trail Segments 8 and 9

- A.1 Trail Next to the Rail Line (Ultimate Trail Configuration)
- A.2 Trail on the Rail Line (Interim Trail)
- A.3 East Harbor Connection

This page intentionally left blank.

CITY OF SANTA CRUZ

PUBLIC WORKS DEPARTMENT

RAIL TRAIL SEGMENTS 8 - 9 TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

Pacific Avenue to 17th Avenue

PROJECT DESCRIPTION

SEGMENT 8, BETWEEN THE ROUNDABOUT AND THE EXISTING RAMP TO THE SAN LORENZO RIVER TRESTLE TRAIL, THE PROJECT GENERALLY INCLUDES IMPROVEMENTS TO THE EXISTING CLASS IV CYCLE TRACK FOR BICYCLES AND SIDEWALK FOR PEDESTRIANS THAT EXTEND ALONG BEACH STREET, ADJACENT TO THE SANTA CRUZ BEACH BOARDWALK AMUSEMENT PARK. FOR SEGMENT 9, CONSTRUCTION OF A MULTI-USE TRAIL WILL BE LOCATED ON THE SANTA CRUZ BRANCH RAILROAD BANK BETWEEN THE EAST SIDE OF THE SAN LORENZO TRESTLE BRIDGE TO THE EAST SIDE OF 17TH AVENUE.

PROJECT DIRECTORY

OWNER
SANTA CRUZ COUNTY REGIONAL
TRANSPORTATION COMMISSION
CONTACT: GRACE BLAKESLEE PHONE: (831) 460-3200
RAIL CONTACT: TOMMY TRAVERS FAX: (831) 460-6178

LANDSCAPE ARCHITECT
RRM DESIGN GROUP
3765 SOUTH HIGUERA, SUITE 102 PHONE: (949) 361-7950
SAN LUIS OBISPO, CA 93401 FAX: (949) 361-7955
CONTACT: KAYLA SZUBIELSKI

CIVIL ENGINEER
RRM DESIGN GROUP
325 DAVIS STREET PHONE: (510) 751-4910
SAN LEANDRO, CA 94577 FAX: (510) 686-4910
CONTACT: DARREN CHOY

ELECTRICAL ENGINEER
THOMA ELECTRIC
3562 EMPLEO ST. PHONE: (805) 543-3850
SAN LUIS OBISPO, CA
CONTACT: CHRIS PATCHIN

GEOTECHNICAL ENGINEER
PACIFIC CREST ENGINEERING
444 AIRPORT BLVD PHONE: (831) 722-9446
WATSONVILLE, CA 95076
CONTACT: CHRIS JOHNSON

STRUCTURAL ENGINEER
MESITI-MILLER ENGINEERING
224 WALNUT ST, SUITE B PHONE: (831) 426-3186
SANTA CRUZ, CA 95060
CONTACT: DALE HENDSBEE

TRAFFIC ENGINEER
WHITLOCK & WEINBERGER (W-TRANS)
1276 LINCOLN AVE, SUITE 204 PHONE: (510) 444-2600
SAN JOSE, CA 9525
CONTACT: STEVE FITZSIMMONS

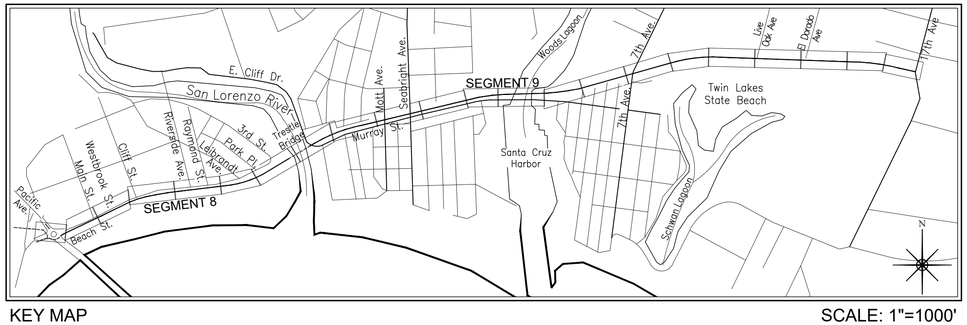
RAIL ENGINEER
ZEPHYR UAS/RAIL (ZUI)
725 W TOWN & COUNTRY RD, SUITE 550 PHONE: (714) 835-6355
ORANGE, CA 92868
CONTACT: ALFRED YALDA

CLIENT
CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT PHONE: (831) 420-5160
CONTACT: NATHAN NGUYEN FAX: (831) 420-5161

SECONDARY CLIENT
COUNTY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT PHONE: (831) 454-2160
CONTACT: ROB TIDMORE FAX: (831) 454-2385

VICINITY MAP

NOT TO SCALE



KEY MAP SCALE: 1"=1000'

SHEET INDEX

TS-1.01	TITLE SHEET
RS-1.01	GENERAL NOTES & ABBREVIATIONS
CP-1.01-1.07	SEGMENT 8 FINAL SCHEMATIC PLANS
CP-1.08-1.22	SEGMENT 9 FINAL SCHEMATIC PLANS
CP-1.10S	TRAFFIC SIGNAL MODS SEABRIGHT/MURRAY
CD-2.01-2.04	SEGMENT 8 TRAIL SECTIONS
CD-3.01-3.13	SEGMENT 9 TRAIL SECTIONS
BP-1.01	STRUCTURAL COVER SHEET
BP-2.01	PILKINGTON CREEK BRIDGE GENERAL PLAN SHEET
BP-2.02	PILKINGTON CREEK BRIDGE IMAGES
BP-3.01	WOODS CREEK VIADUCT GENERAL PLAN SHEET
BP-4.01	WOODS LAGOON BRIDGE GENERAL PLAN SHEET
BP-5.01	EAST HARBOR VIADUCT GENERAL PLAN SHEET
BP-6.01	LEONA CREEK VIADUCT GENERAL PLAN SHEET
BP-7.01	LIVE OAK VIADUCT GENERAL PLAN SHEET
WD-1.01	RETAINING DETAIL SHEET
WD-1.02	RETAINING WALL DETAIL SHEET
WD-3.01	CONCRETE SPREAD FOOTING RETAINING WALLS

FINAL SCHEMATIC DESIGN SUBMITTAL

STATE PROJECT TITLE:
STATE PROJECT NUMBER:

REFERENCES	DATE 09/21/22	SCALE AS SHOWN	
FIELD BOOK:	DRAWN KS/EK/MMS	TS-1.01	
DRAWING #:	DESIGN KS/EK/MMS	VAULT NO.	
	CHECKED MS/KS		

Layout Tab Name: BP-1.01, Xrefs: C:\Users\...\Segment 8 Trail Next to the Rail Line - Ultimate Configuration_Segment 8.dwg, C:\Users\...\Segment 9 Trail Next to the Rail Line - Ultimate Configuration_Segment 9.dwg, C:\Users\...\Segment 8 Trail Next to the Rail Line - Ultimate Configuration_Segment 8 Plan.dwg, M:\Projects\...\Structures\...\BP-1.01.dwg, Plotted By: mmeadows, Plotted On: Apr 21, 2023 - 4:06pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

TREE NOTES

1. EXISTING TREE NOTES
Existing trees over 3-inches in diameter within the Limit of Work were field surveyed and numbered from 2769 to 3594. The construction documents employ the following tree number coding system:

- #27XX denotes an existing tree with a numbered metal forestry tag affixed to its trunk.
- #27XX* denotes an existing tree with an assigned number, but with no metal forestry tag affixed to its trunk.
- #27XX N/H/S denotes an existing tree that qualifies as a Regional Native, Heritage or Significant Tree as defined by the City/County of Santa Cruz.

POTENTIAL STAGING AREAS

- CITY PARKING LOT 18 (PACIFIC AVENUE ROUNDABOUT)
- SEABRIGHT AVENUE / WATSON STREET PARKING LOT
- EATON STREET
- SIMPKINS SWIM CENTER PARKING LOT
- 901 7TH AVENUE
- 2700 BROMMER STREET
- 835 BAY AVENUE

ABBREVIATIONS

AB	AGGREGATE BASE OR ANCHOR BOLT
ABV	ABOVE
AC	ASPHALTIC CONCRETE
ADJ	ADJACENT
ALT	ALTERNATE
APPROX/APPX	APPROXIMATE
BC/BOC	BACK OF CURB
BEL	BELOW
BF / BOF	BOTTOM OF FOOTING
BLDG	BUILDING
BLK	BLOCK
BOT	BOTTOM
BOW	BACK OF WALK
BR	BOTTOM OF RAMP
CB	CATCH BASIN
CF	CUBIC FOOT
CIP	CAST IN PLACE
C/L	CENTERLINE
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUE
CP	CENTER POINT
CR	CURB RETURN
CTR	CENTER
DET	DETAIL
DI	DRAIN INLET
DIA	DIAMETER
DIM	DIMENSION
DS	DOWN SPOUT
DWG	DRAWING
EA	EACH
ELECT	ELECTRICAL
ELEV	ELEVATION
ENCL	ENCLOSURE
EP	EDGE OF PAVEMENT
EQ	EQUAL
EX	EXISTING
EXIST	EXISTING
(E)	EXISTING
FC / FOC	FRONT OF CURB
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FL	FLOWLINE
FOW	FACE OF WALL
FND	FOUNDATION
FS	FINISHED SURFACE OF PAVING/SURFACING
FTG	FOOTING
FUT	FUTURE
GA	GAUGE
GB	GRADE BREAK
GALV	GALVANIZED
GR	GRATE
HC	HANDICAPPED
HOR, HORZ	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
ID	INSIDE DIAMETER
INV	INVERT
IR, IRR, IRRG	IRRIGATION
L	LENGTH
LB	LAG BOLT
LOC	LOCATION, LOCATE
LIP	LIP OF GUTTER PAN
LF	LINEAR FEET
LP	LOW POINT
MAS	MASONRY
MAX	MAXIMUM
MFR	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MAINLINE
(N)	NEW
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPT	OPTIONAL
PA	PLANTING AREA
PC	POINT OF CURVE
PERF	PERFORATE (D)
PERP	PERPENDICULAR
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PT	POINT, POINT OF TANGENCY
PVMT/PVNG	PAVEMENT OR PAVING
R, RAD	RADIUS
REBAR	REINFORCING BAR
REF	REFERENCE
REM	REMOVE
REQ'D	REQUIRED
REV	REVISION(S), REVISED
ROW	RIGHT OF WAY
S	SLOPE
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER
S/S	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STRUC	STRUCTURE/ STRUCTURAL
SURF	SURFACE
SWCL	SIDEWALK CENTERLINE
SYS	SYSTEM
TBC	TOP BACK OF CURB
TC	TOP OF CURB
TF / TOF	TOP OF FOOTING
TR	TOP OF RAMP
TW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VAR	VARIES
VERT	VERTICAL
W	WATER
W/	WITH
W/O	WITHOUT
WL	WATERLINE
@	AT
℄	CENTERLINE

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: RS-1.01, Images: 1200px-California_1.svg.png, 1200px-California_1.svg.png, Xrefs: XTB-0193-04-RWT.dwg, XCNAP-0193-04-RWT.dwg, K:\2000\0193-04-RGTB-Santa Cruz-Rail Trail-8-9\Rail with Trail\Landscape-Architecture\Task-8-Schematic Design\Sheet Files\TS-0193-04-RWT-S8+9.dwg, Plotted By: KMSobieski, Plotted: Sep 21, 2022 - 8:25pm

PRELIMINARY
NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

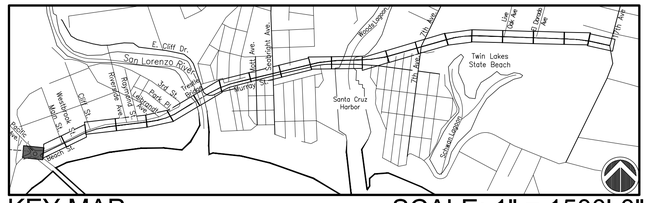
REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

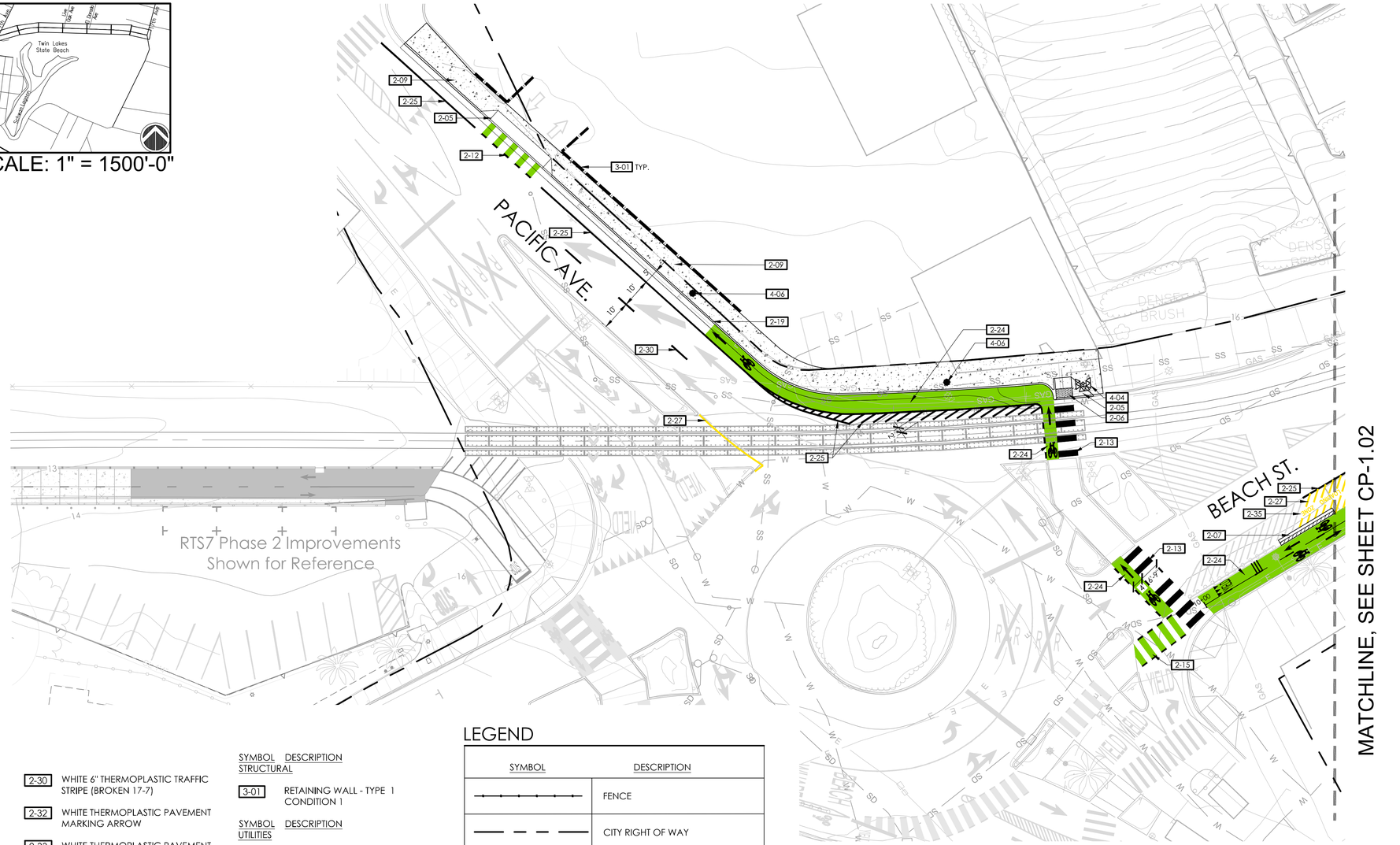
RAIL TRAIL SEGMENT 7
MULTI-USE TRAIL
GENERAL NOTES & ABBREVIATIONS

REFERENCES	DATE	09/21/22	SCALE AS SHOWN
FIELD BOOK:	DRAWN	KS/MMS/EK	RS-1.01
DRAWING #: TS-0193-04-RWT-S8+9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-03 POST AND WIRE FENCE

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" CURB
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-07 TAPERED CURB
- 2-09 CONCRETE SIDEWALK
- 2-11 HMA PAVEMENT
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-15 CLASS IV BIKE CROSSING MARKINGS
- 2-18 BIKESHARE STATION
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-21 PAVERS
- 2-22 CONCRETE BAND
- 2-23 THERMOPLASTIC
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-25 WHITE 6" THERMOPLASTIC TRAFFIC STRIPE
- 2-26 WHITE 8" THERMOPLASTIC TRAFFIC STRIPE
- 2-27 YELLOW 6" THERMOPLASTIC TRAFFIC STRIPE
- 2-28 YELLOW 8" THERMOPLASTIC TRAFFIC STRIPE
- 2-29 WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)
- 2-30 WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)
- 2-32 WHITE THERMOPLASTIC PAVEMENT MARKING ARROW
- 2-33 WHITE THERMOPLASTIC PAVEMENT MARKING RAILROAD LEGEND
- 2-34 WHITE PAVEMENT MARKING WORDS
- 2-35 YELLOW PAVEMENT MARKING WORDS
- 2-36 CONCRETE STAIRS
- 2-40 PIP EXISTING VULCANIZED RUBBER DIVIDER
- 2-41 VULCANIZED RUBBER DIVIDER
- 2-42 RAISED CONCRETE ISLAND
- 2-43 PEDESTRIAN GUARDRAIL

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL - TYPE 1 CONDITION 1

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT

LEGEND

SYMBOL	DESCRIPTION
	FENCE
	CITY RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALL
	CONCRETE PAVEMENT
	CURB WITH VERTICAL FACE ADJ. PARKING & TAPERED ADJ. CLASS IV
	VULCANIZED RUBBER DIVIDER

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S8

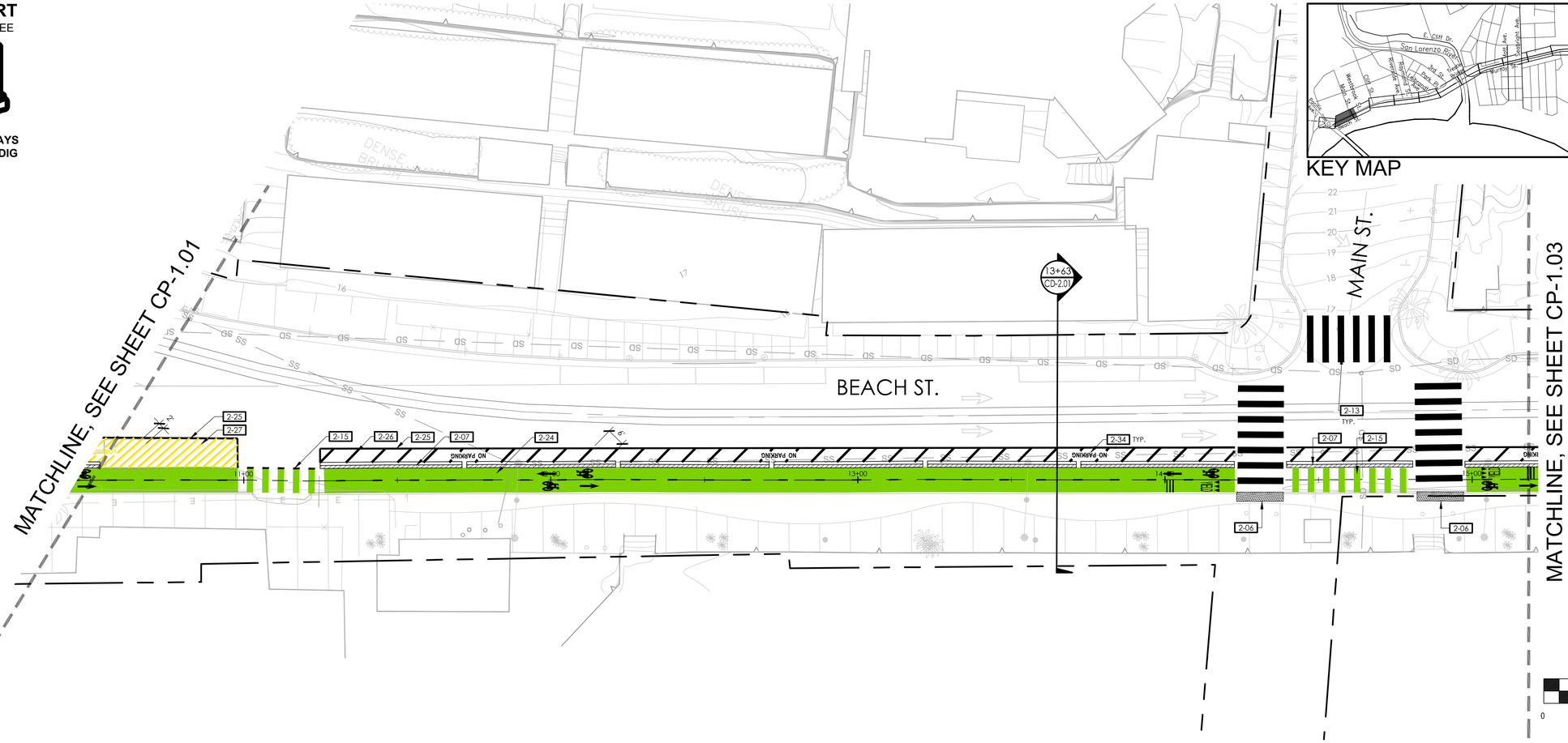
DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

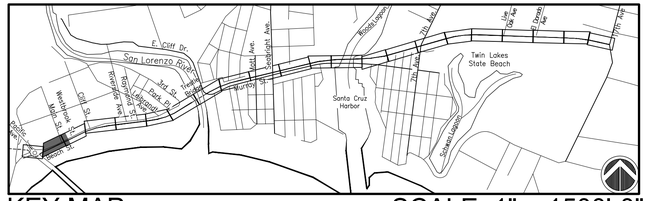
SCALE 1" = 20'-0"
CP-1.01
VAULT NO.

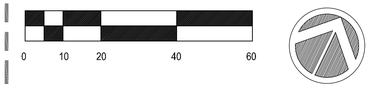
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.01, Images: 1200px-California_1.svg.png, Sky Background.png, Xrefs: P78-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, KEYMAP-0193-04-RCP19.dwg, SEC-0193-04-N:\000\0193-04-RCP19-Santa-Cruz-Rail-Trail-8-9\Civil with Trail\Landscape-Architecture\Visio-8-Schematic Design\Sheet-Files\Segment 8\CP-0193-04-RWT-S8.dwg, Plotted By: KMitzelfelt, Plotted: Sep 21, 2022 - 7:51am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG







REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

1-03	POST AND WIRE FENCE

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

2-01	6" CURB
2-05	CURB RAMP
2-06	DETECTABLE WARNING SURFACE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-15	CLASS IV BIKE CROSSING MARKINGS
2-18	BIKESHARE STATION
2-19	6" CURB AND GUTTER
2-20	DRIVEWAY
2-21	PAVERS
2-22	CONCRETE BAND
2-23	THERMOPLASTIC
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-25	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE
2-26	WHITE 8" THERMOPLASTIC TRAFFIC STRIPE
2-27	YELLOW 6" THERMOPLASTIC TRAFFIC STRIPE
2-28	YELLOW 8" THERMOPLASTIC TRAFFIC STRIPE
2-29	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)
2-30	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)
2-32	WHITE THERMOPLASTIC PAVEMENT MARKING ARROW
2-33	WHITE THERMOPLASTIC PAVEMENT MARKING RAILROAD LEGEND
2-34	WHITE PAVEMENT MARKING WORDS
2-35	YELLOW PAVEMENT MARKING WORDS
2-36	CONCRETE STAIRS
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
2-42	RAISED CONCRETE ISLAND
2-43	PEDESTRIAN GUARDRAIL

SYMBOL DESCRIPTION
STRUCTURAL

3-01	RETAINING WALL - TYPE 1 CONDITION 1

SYMBOL DESCRIPTION
UTILITIES

4-01	PIP EXISTING EQUIPMENT
4-04	RELOCATED RAIL EQUIPMENT
4-06	RELOCATED LIGHT

LEGEND

SYMBOL	DESCRIPTION
	FENCE
	CITY RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALL
	CONCRETE PAVEMENT
	CURB WITH VERTICAL FACE ADJ. PARKING & TAPERED ADJ. CLASS IV
	VULCANIZED RUBBER DIVIDER

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)
FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S8

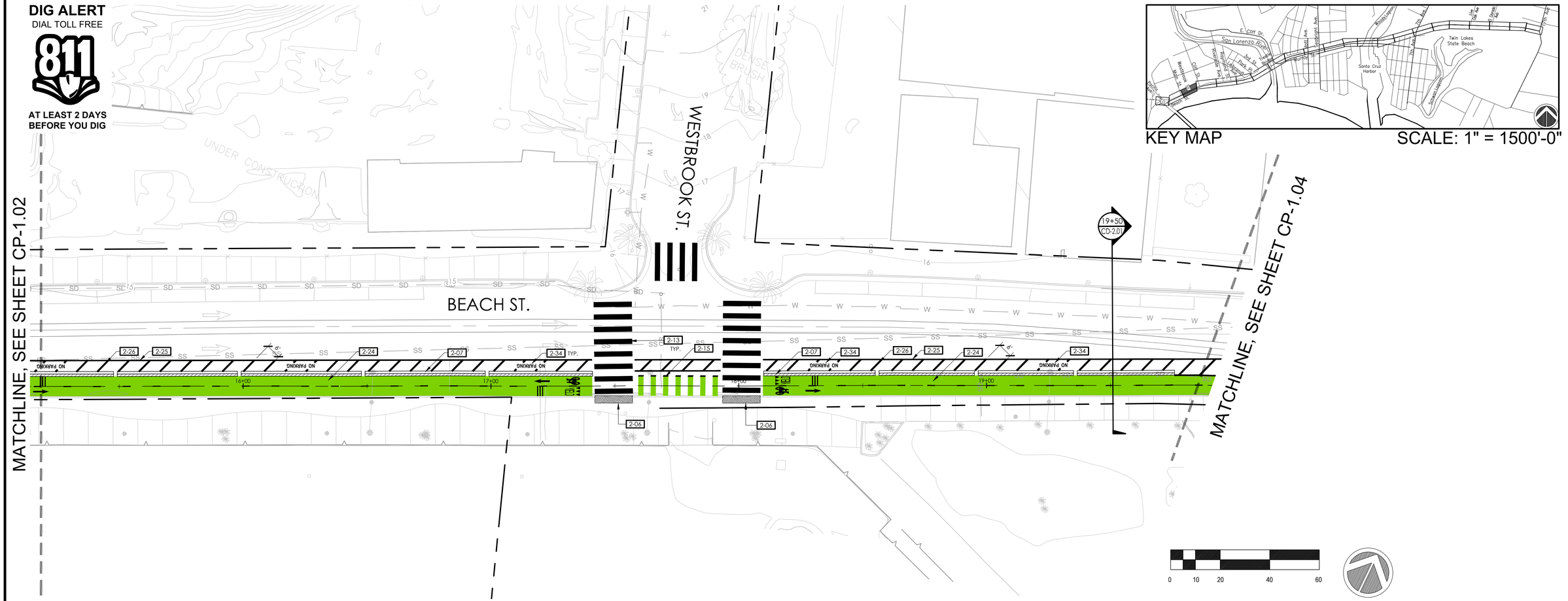
DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"
CP-1.02
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.02, Images: 1200px-California_Logo.png, Sky Background.png, Xrefs: RTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XDTAIL-0193-04-RWT-S8.dwg, XDTAIL2-0193-04-RWT-S8.dwg, SDC-0193-04-RWT-S8.dwg, XW-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, XP-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XDTAIL-0193-04-RWT-S8.dwg, XDTAIL2-0193-04-RWT-S8.dwg, SDC-0193-04-RWT-S8.dwg, XW-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, XP-0193-04-RWT-S8.dwg, Xrefs: RTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XDTAIL-0193-04-RWT-S8.dwg, XDTAIL2-0193-04-RWT-S8.dwg, SDC-0193-04-RWT-S8.dwg, XW-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, XP-0193-04-RWT-S8.dwg, Xrefs: RTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XDTAIL-0193-04-RWT-S8.dwg, XDTAIL2-0193-04-RWT-S8.dwg, SDC-0193-04-RWT-S8.dwg, XW-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, XP-0193-04-RWT-S8.dwg, XDTAIL-0193-04-RWT-S8.dwg, XDTAIL2-0193-04-RWT-S8.dwg, SDC-0193-04-RWT-S8.dwg, XW-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, XP-0193-04-RWT-S8.dwg, Xrefs: RTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP
SCALE: 1" = 1500'-0"
Twin Lakes State Beach
Santa Cruz Harbor
Seabright Ave.
Soquel Ave.
Bay St.
Mission St.
Swift St.
Westlake St.
Cliff St.
Broadway
Portola Dr.
Escalona Dr.
Escalona Dr.
Woodrow Ave.
Rio Del Mar
Seacliff Dr.
Capitola Rd.
Capitola Ave.
Clares St.
Chanticleer Ave.
Capitola Ave.
Bay Ave.
Park Ave.
Rosedale Ave.
Life Gate Ave.
Opal Cliffs Dr.
Thurber Ln.
Thurber Ln.
Thurber Ln

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

1-03	POST AND WIRE FENCE

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

2-01	6" CURB
2-05	CURB RAMP
2-06	DETECTABLE WARNING SURFACE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-15	CLASS IV BIKE CROSSING MARKINGS
2-18	BIKESHARE STATION
2-19	6" CURB AND GUTTER
2-20	DRIVEWAY
2-21	PAVERS
2-22	CONCRETE BAND
2-23	THERMOPLASTIC
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-25	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE
2-26	WHITE 8" THERMOPLASTIC TRAFFIC STRIPE
2-27	YELLOW 6" THERMOPLASTIC TRAFFIC STRIPE
2-28	YELLOW 8" THERMOPLASTIC TRAFFIC STRIPE
2-29	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)
2-30	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)
2-32	WHITE THERMOPLASTIC PAVEMENT MARKING ARROW
2-33	WHITE THERMOPLASTIC PAVEMENT MARKING RAILROAD LEGEND
2-34	WHITE PAVEMENT MARKING WORDS
2-35	YELLOW PAVEMENT MARKING WORDS
2-36	CONCRETE STAIRS
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
2-42	RAISED CONCRETE ISLAND
2-43	PEDESTRIAN GUARDRAIL

SYMBOL DESCRIPTION
STRUCTURAL

3-01	RETAINING WALL - TYPE 1 CONDITION 1

SYMBOL DESCRIPTION
UTILITIES

4-01	PIP EXISTING EQUIPMENT
4-04	RELOCATED RAIL EQUIPMENT
4-06	RELOCATED LIGHT

LEGEND

SYMBOL	DESCRIPTION
	FENCE
	CITY RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALL
	CONCRETE PAVEMENT
	CURB WITH VERTICAL FACE ADJ. PARKING & TAPERED ADJ. CLASS IV
	VULCANIZED RUBBER DIVIDER

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)
FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:
DRAWING #: CP-0193-04-RWT-S8

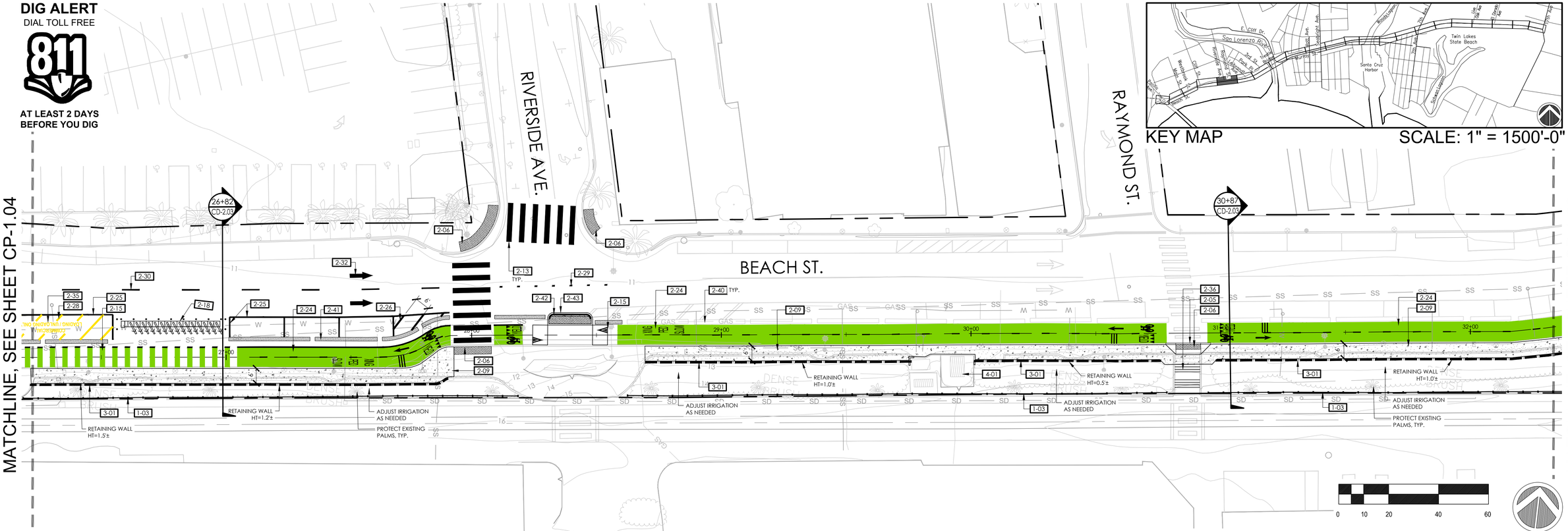
DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"
CP-1.04
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.04, Images: 1200px-California_Long.png, Sky Background.png, Xrefs: XTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XSTWW-0193-04-RWT-S8.dwg, XSC-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, XH

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

1-03	POST AND WIRE FENCE

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

2-01	6" CURB
2-05	CURB RAMP
2-06	DETECTABLE WARNING SURFACE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-15	CLASS IV BIKE CROSSING MARKINGS
2-18	BIKESHARE STATION
2-19	6" CURB AND GUTTER
2-20	DRIVEWAY
2-21	PAVERS
2-22	CONCRETE BAND
2-23	THERMOPLASTIC
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-25	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE
2-26	WHITE 8" THERMOPLASTIC TRAFFIC STRIPE
2-27	YELLOW 6" THERMOPLASTIC TRAFFIC STRIPE
2-28	YELLOW 8" THERMOPLASTIC TRAFFIC STRIPE
2-29	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)
2-30	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)
2-32	WHITE THERMOPLASTIC PAVEMENT MARKING ARROW
2-33	WHITE THERMOPLASTIC PAVEMENT MARKING RAILROAD LEGEND
2-34	WHITE PAVEMENT MARKING WORDS
2-35	YELLOW PAVEMENT MARKING WORDS
2-36	CONCRETE STAIRS
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
2-42	RAISED CONCRETE ISLAND
2-43	PEDESTRIAN GUARDRAIL

SYMBOL DESCRIPTION
STRUCTURAL

3-01	RETAINING WALL - TYPE 1 CONDITION 1

SYMBOL DESCRIPTION
UTILITIES

4-01	PIP EXISTING EQUIPMENT
4-04	RELOCATED RAIL EQUIPMENT
4-06	RELOCATED LIGHT

LEGEND

SYMBOL	DESCRIPTION
	FENCE
	CITY RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALL
	CONCRETE PAVEMENT
	CURB WITH VERTICAL FACE ADJ. PARKING & TAPERED ADJ. CLASS IV
	VULCANIZED RUBBER DIVIDER

PRELIMINARY
NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S8

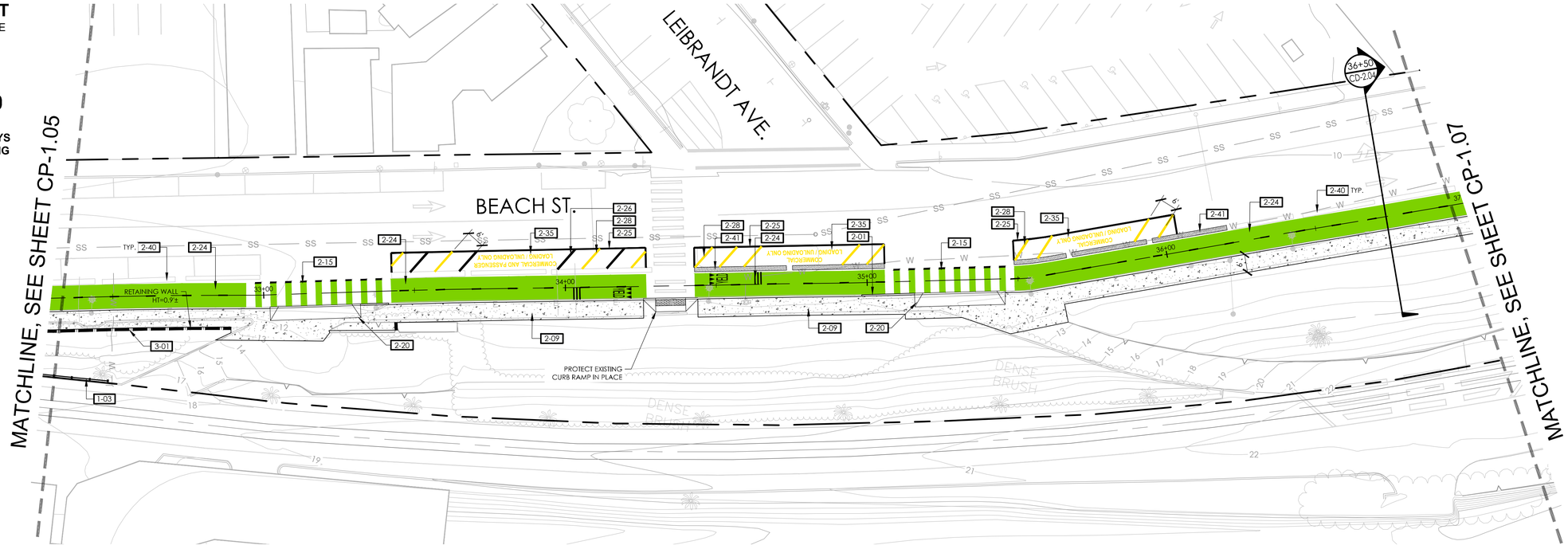
DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

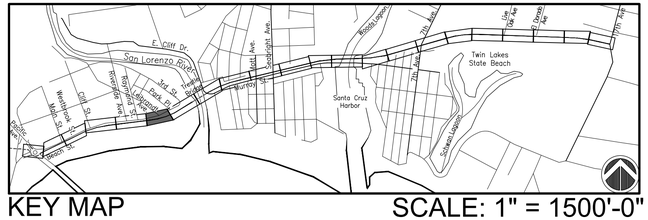
SCALE 1" = 20'-0"
CP-1.05
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.05, Images: 1200px-California_1-svg.png, Sky Background.svg, Xrefs: XTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, KEYMAP-0193-04-RWT-S8.dwg, SEC-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XV-0193-04-RWT-S8.dwg, XI-0193-04-RWT-S8.dwg, XS-0193-04-RWT-S8.dwg, Plotted By: KMDubiel, Plotted: Sep 21, 2022 - 7:52am
N:\2021\0193-04-RCTP-Santa Cruz Rail Trail-8-9\Civil with Trail\Landscape-Architecture\Visio-8b-Schematic Design\Sheet-Files\Segment 8\CP-0193-04-RWT-S8.dwg

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





KEY MAP

SCALE: 1" = 1500'-0"

0 10 20 40 60

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-03 POST AND WIRE FENCE

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" CURB
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-07 TAPERED CURB
- 2-09 CONCRETE SIDEWALK
- 2-11 HMA PAVEMENT
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-15 CLASS IV BIKE CROSSING MARKINGS
- 2-18 BIKESHARE STATION
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-21 PAVERS
- 2-22 CONCRETE BAND
- 2-23 THERMOPLASTIC
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-25 WHITE 6" THERMOPLASTIC TRAFFIC STRIPE
- 2-26 WHITE 8" THERMOPLASTIC TRAFFIC STRIPE
- 2-27 YELLOW 6" THERMOPLASTIC TRAFFIC STRIPE
- 2-28 YELLOW 8" THERMOPLASTIC TRAFFIC STRIPE
- 2-29 WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)
- 2-30 WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)
- 2-32 WHITE THERMOPLASTIC PAVEMENT MARKING ARROW
- 2-33 WHITE THERMOPLASTIC PAVEMENT MARKING RAILROAD LEGEND
- 2-34 WHITE PAVEMENT MARKING WORDS
- 2-35 YELLOW PAVEMENT MARKING WORDS
- 2-36 CONCRETE STAIRS
- 2-40 PIP EXISTING VULCANIZED RUBBER DIVIDER
- 2-41 VULCANIZED RUBBER DIVIDER
- 2-42 RAISED CONCRETE ISLAND
- 2-43 PEDESTRIAN GUARDRAIL

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL - TYPE 1 CONDITION 1

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT

LEGEND

SYMBOL	DESCRIPTION
	FENCE
	CITY RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALL
	CONCRETE PAVEMENT
	CURB WITH VERTICAL FACE ADJ. PARKING & TAPERED ADJ. CLASS IV
	VULCANIZED RUBBER DIVIDER

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S8

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"

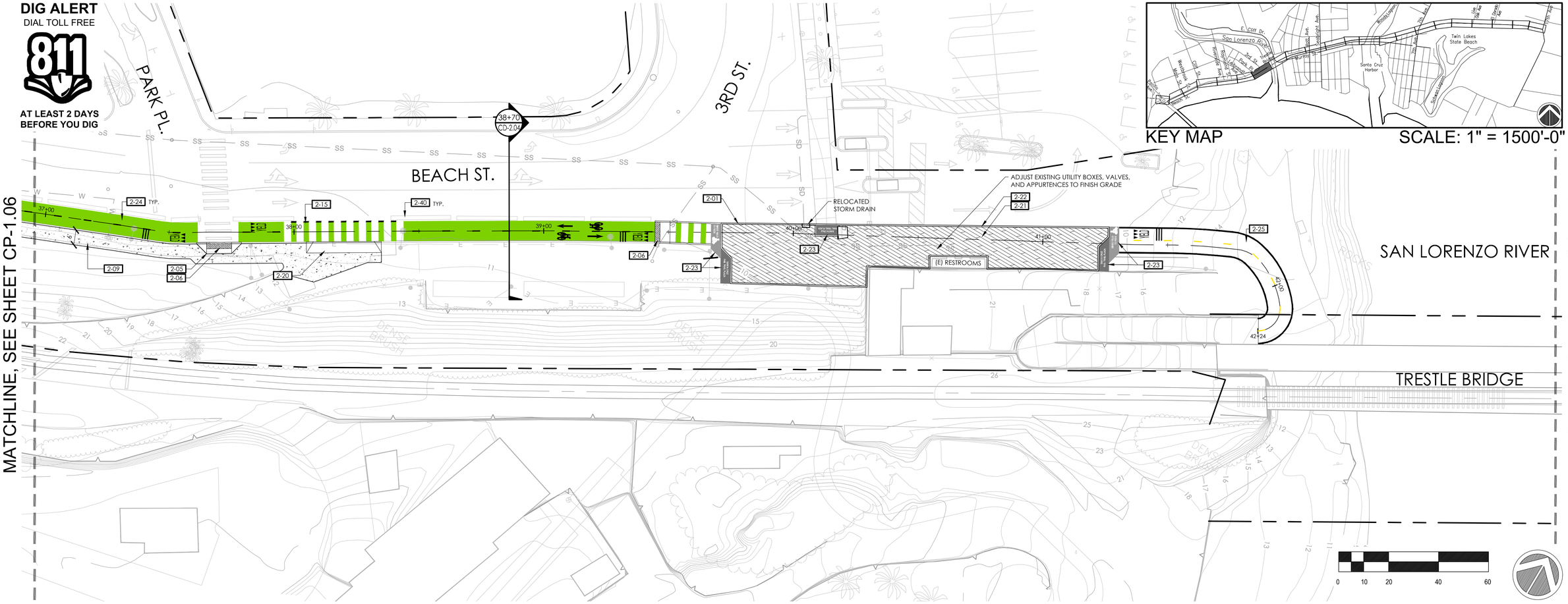
CP-1.06

VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.06, Images: 1200px-California_1.svg.png, Sky Background.svg, Xrefs: XTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XDMAP-0193-04-RWT-S8.dwg, XEC-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XL-0193-04-RWT-S8.dwg, XV-0193-04-RWT-S8.dwg, XEMAP-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XSB-0193-04-RWT.dwg, Xrefs: Sky Background.svg, 1200px-California_1.svg.png
N:\2021\0193-04-RWT-Santa Cruz Rail Trail-8-9\Rail with Trail\Landscape-Architecture\Vase-08-Schematic Design\Sheet-Files\Segment 8\CP-0193-04-RWT-S8.dwg, Plotted By: KMDoubleek, Plotted Sep 21, 2022 - 7:52pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

1-03	POST AND WIRE FENCE

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

2-01	6" CURB
2-05	CURB RAMP
2-06	DETECTABLE WARNING SURFACE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-15	CLASS IV BIKE CROSSING MARKINGS
2-18	BIKESHARE STATION
2-19	6" CURB AND GUTTER
2-20	DRIVEWAY
2-21	PAVERS
2-22	CONCRETE BAND
2-23	THERMOPLASTIC
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-25	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE
2-26	WHITE 8" THERMOPLASTIC TRAFFIC STRIPE
2-27	YELLOW 6" THERMOPLASTIC TRAFFIC STRIPE
2-28	YELLOW 8" THERMOPLASTIC TRAFFIC STRIPE
2-29	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 6-1)
2-30	WHITE 6" THERMOPLASTIC TRAFFIC STRIPE (BROKEN 17-7)
2-32	WHITE THERMOPLASTIC PAVEMENT MARKING ARROW
2-33	WHITE THERMOPLASTIC PAVEMENT MARKING RAILROAD LEGEND
2-34	WHITE PAVEMENT MARKING WORDS
2-35	YELLOW PAVEMENT MARKING WORDS
2-36	CONCRETE STAIRS
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
2-42	RAISED CONCRETE ISLAND
2-43	PEDESTRIAN GUARDRAIL

SYMBOL DESCRIPTION
STRUCTURAL

3-01	RETAINING WALL - TYPE 1 CONDITION 1

SYMBOL DESCRIPTION
UTILITIES

4-01	PIP EXISTING EQUIPMENT
4-04	RELOCATED RAIL EQUIPMENT
4-06	RELOCATED LIGHT

LEGEND

SYMBOL	DESCRIPTION
	FENCE
	CITY RIGHT OF WAY
	EXISTING FENCE
	RETAINING WALL
	CONCRETE PAVEMENT
	CURB WITH VERTICAL FACE ADJ. PARKING & TAPERED ADJ. CLASS IV
	VULCANIZED RUBBER DIVIDER

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S8

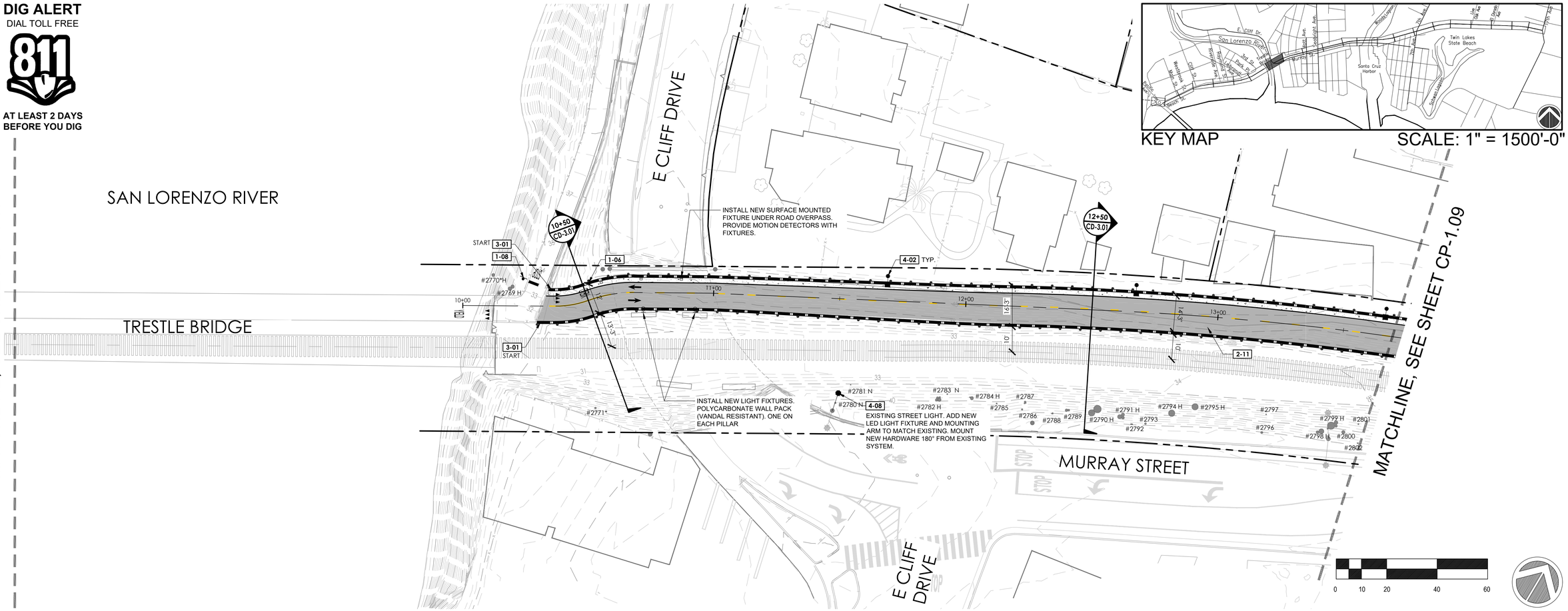
DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"
CP-1.07
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.07, Images: 1200px-California_1.svg.png, Sky Background.png, Xrefs: XTB-0193-04-RWT.dwg, XSB-0193-04-RWT-S8.dwg, XC-0193-04-RWT-S8.dwg, XT-0193-04-RWT-S8.dwg, XEWMP-0193-04-RWT-S8.dwg, XEC-0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, XLOGO(1)0193-04-RWT-S8.dwg, XH-0193-04-RWT-S8.dwg, K:\Civil\0193-04-RWT-Santa Cruz Rail Trail-8-9\Civil 3D\Trail\Landscape-Architecture\Vista-09-Schematic Design\Sheet-Files\Segment 8\CP-0193-04-RWT-S8.dwg, Plotted By: KMDuBakski, Plotted: Sep 21, 2022 - 7:52am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#2BXX #2BXX* #2BXX N/P/S	EXISTING TREE #2BXX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2BXX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2BXX N/A/VS: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

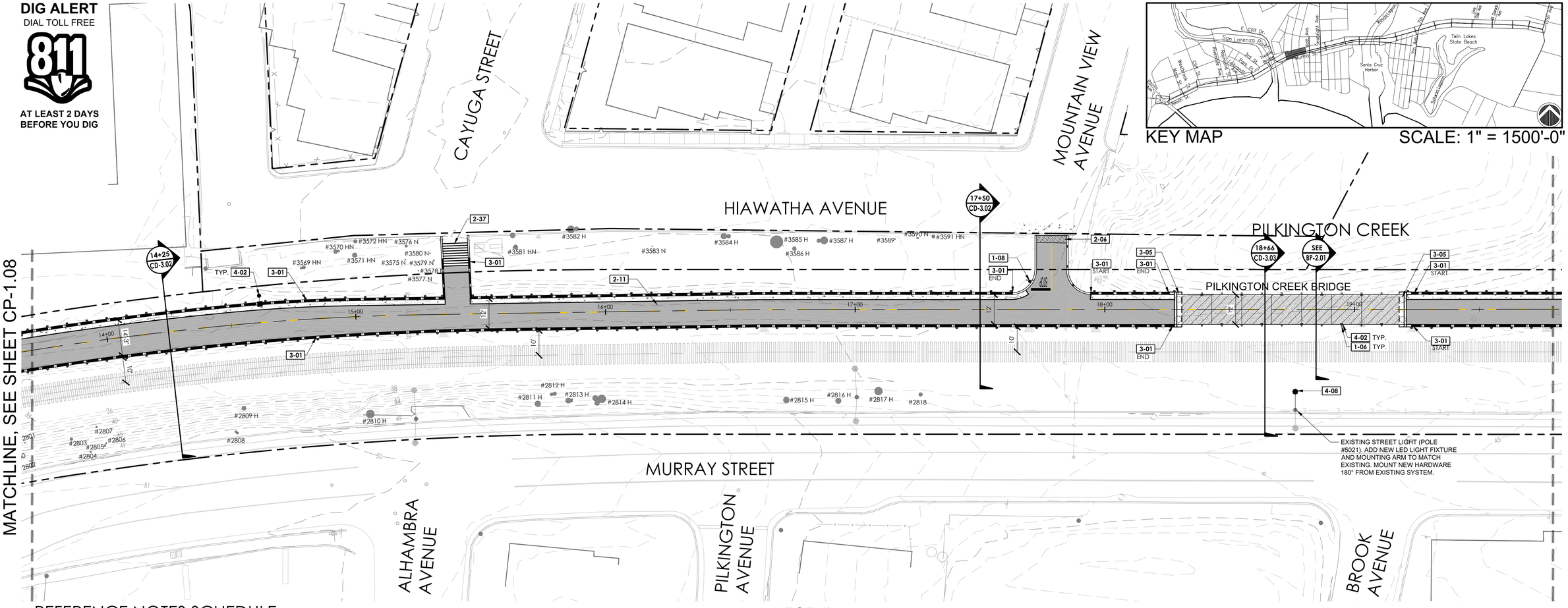
SCALE 1" = 20'-0"
CP-1.08
VAULT NO.

SHEET 10 OF 53

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.08, Images: 1200px-California_1.svg.png, Xrefs: RTB-0193-04-RWT.dwg, XT-0193-04-RWT.dwg, KEYMAP-0193-04-RWT-S9.dwg, EXHIBIT-0193-04-RWT-S9.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, K:\2021\0193-04-RCTB-Santa Cruz Rail Trail-8-9\Civil with Trail\Landscape-Architecture\Task-4b-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: mmistovich, Plotted: Sep 22, 2022 - 10:36am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



0 10 20 40 60

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/N/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/N/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:
DRAWING #: CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"
CP-1.09
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.09, Images: 1200px-California_Long.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT.dwg, XCMAP-0193-04-RCU.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, N:\2000\10193-04-RCTB-Santa Cruz Rail\10 - Final Design\Drawings\Landscape Architecture\Tom\B-Sheets\ Design\Sheet Files\Segment 8\CP-0193-04-RWT-S9.dwg, Plotted By: dpickens, Plotted: Sep 21, 2022 - 7:17pm

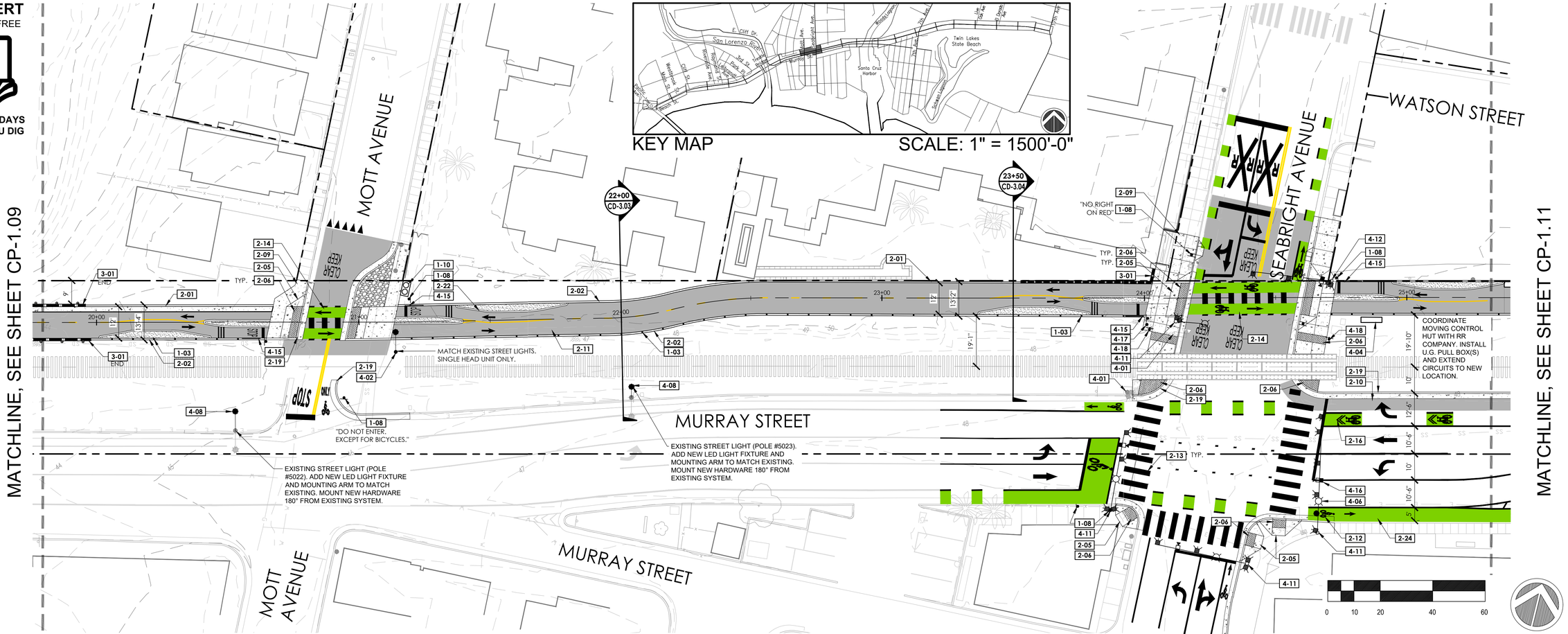
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"

MATCHLINE, SEE SHEET CP-1.09

MATCHLINE, SEE SHEET CP-1.11



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/V/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/V/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
RIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	1" = 20'-0"
	CP-1.10
VAULT NO.	

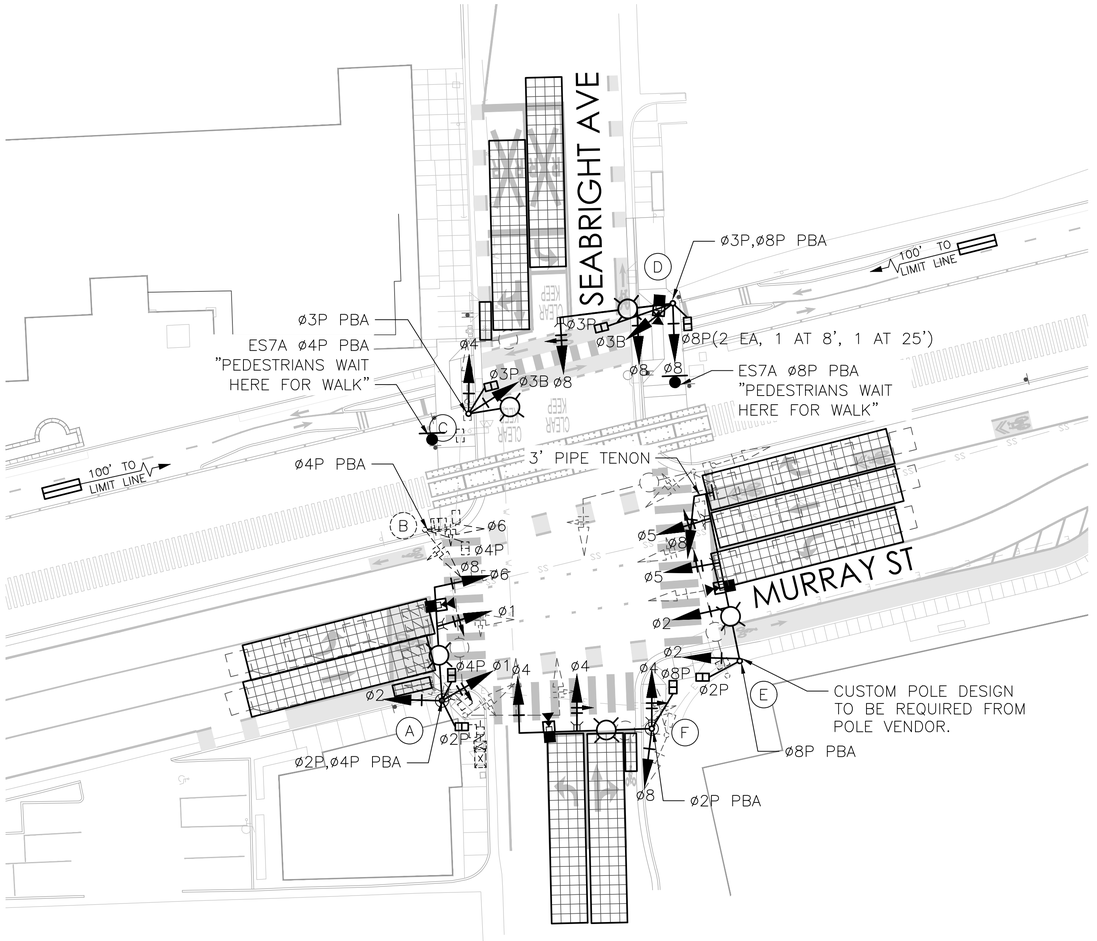
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

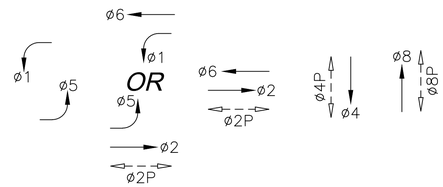
Layout Tab Name: CP-1.10, Images: 1200px-California_1.svg.png, Xrefs: RTB-0193-04-RWT.dwg, ST-0193-04-RWT-S9.dwg, KEYMAP-0193-04-RTB.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, N:\2001\0193-04-RCTP-Santa Cruz Rail Trail-B-JK\Bid with Trail\Landscape-Architecture\Trail-B-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: ejaderlin, Plotted: Sep 21, 2022 - 7:17pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

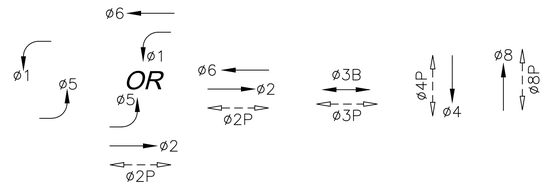
LEGEND (THIS SHEET ONLY)

- EXISTING VEHICLE HEAD
- NEW VEHICLE HEAD
- EXISTING PEDESTRIAN HEAD
- NEW PEDESTRIAN HEAD
- VIDEO DETECTION ZONE
- VIDEO CAMERA
- SIGN
- SIGN ON TRAFFIC SIGNAL POLE





EXISTING PHASE DIAGRAM



PROPOSED PHASE DIAGRAM

REMOVAL LIST:

2 – TYPE 1B POLE
1 – 25' MAST ARM POLE
1 – 30' MAST ARM POLE
1 – 35' MAST ARM POLE
1 – STREET LIGHT POLE
1 – TYPE 15
13 – VEHICLE HEADS
3 – PULL BOXES

N

0 20' 40'
SCALE: 1"=20'

30% DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.10S, Images: , Xrefs: CP-0193-04-XREF-09.dwg, Stamp_MiddleHand.dwg, XT-0193-04-XREF-09.dwg, XC-0193-04-XREF-09.dwg, XTB-0193-04-XREF.dwg
N:\2020\19193-04-RETA-Santa Cruz Rail-Trail 8 & 9\Plan and Profile\Landscape Architecture\Sheet Files & Submittal Sheets\Sheet Files\Segment 8\SC-Trail-CP0193-04-SHT-CP-1.10S_Seabright Ave_Murray St.dwg Plotted By: hmccubbin, Plotted: Sep 14, 2022 - 5:00pm

PRELIMINARY NOT FOR CONSTRUCTION

w-trans.com | (510) 444-2600
414 13th St. Floor 5
Oakland, CA 94612

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

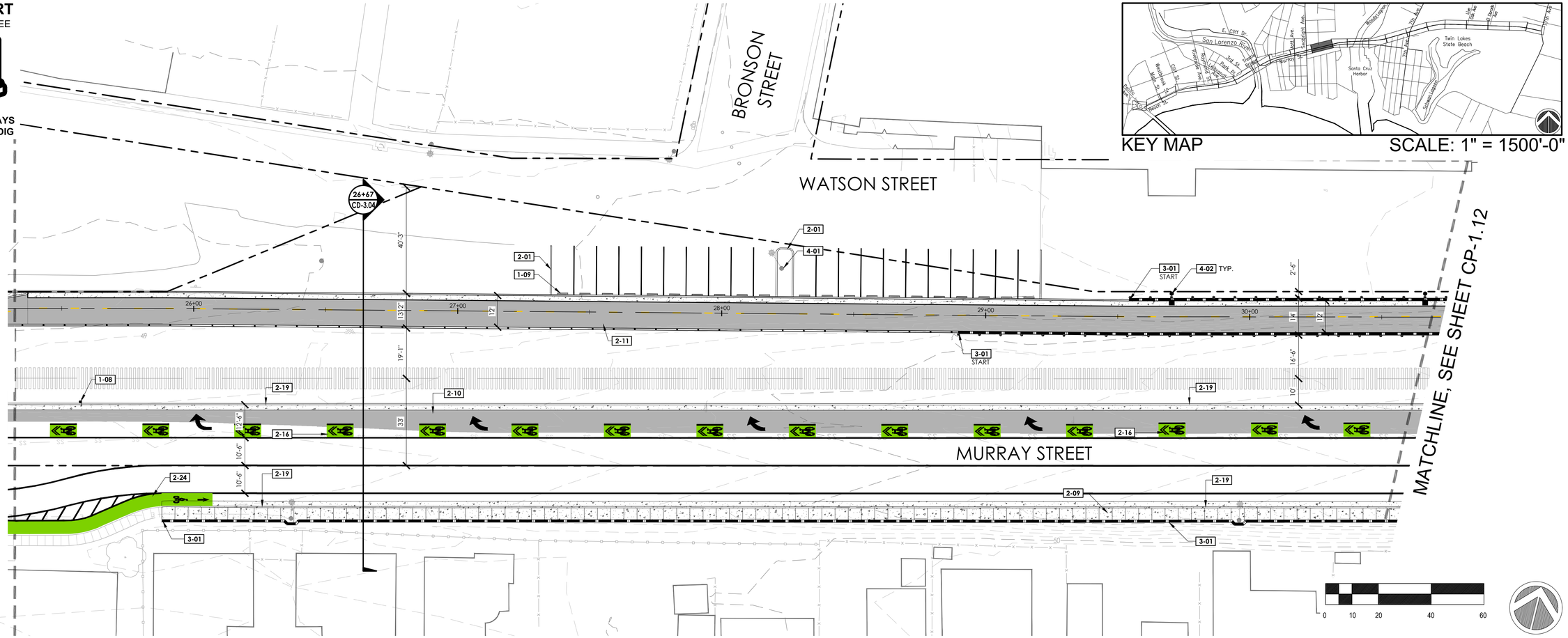
RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL)

TRAFFIC SIGNAL MODIFICATION SEABRIGHT AVE/MURRAY ST

REFERENCES			
FIELD BOOK:	DATE	09/21/22	SCALE 1" = 20'
	DRAWN	ACJ	CP-1.10S
DRAWING #: SCR012	DESIGN	SF	VAULT NO.
	CHECKED		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY
NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"

CP-1.11

VAULT NO.

SHEET 14 OF 53

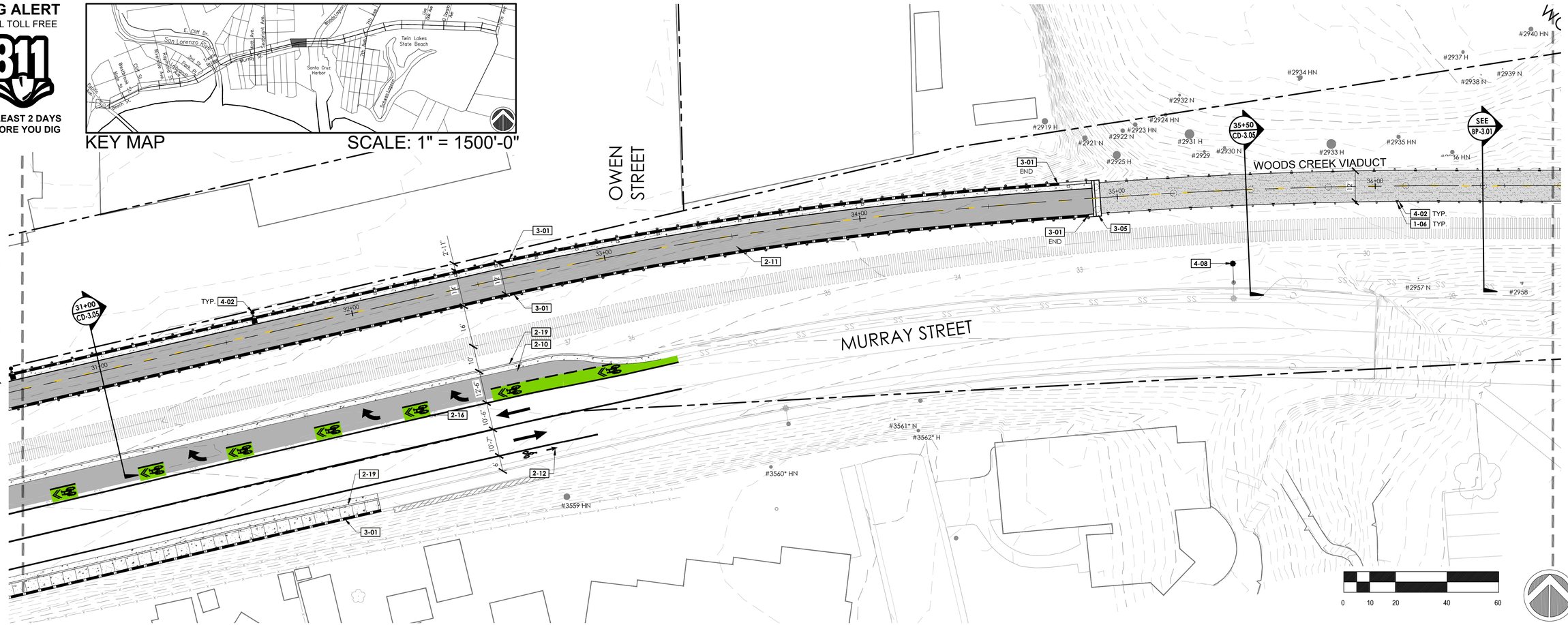
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.11, Images: 1200px-California_1.svg.png , Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XDWP-0193-04-RDS18.dwg, ER Exhibit - 8.5x11.dwg, XS-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
H	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
	LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"

CP-1.12

VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.12 | Xrefs: 1200ac-California_1.ctb | Xrefs: P78-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XDWMP-0193-04-RCTB.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

MATCHLINE, SEE SHEET CP-1.12

MATCHLINE, SEE SHEET CP-1.14

WOODS LAGOON

WOODS CREEK VIADUCT

WOODS LAGOON RAIL ROAD BRIDGE

EAST HARBOR VIADUCT

MURRAY STREET

EATON STREET

SANTA CRUZ HARBOR

KEY MAP SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/N/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/N/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

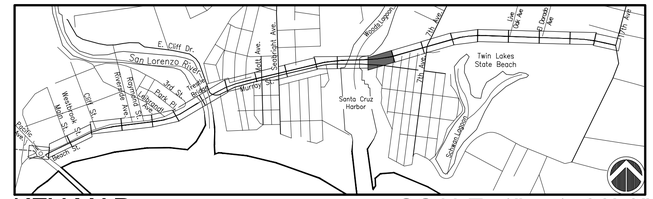
DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	1" = 20'-0"
	CP-1.13
VAULT NO.	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.13, Images: 1200px-California_1.svg.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XDWG-0193-04-RTB.dwg, ESR Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg
N:\2001\0193-04-RCTP-Santa Cruz Rail Trail-8-9\Rail Trail\Landscape-Architecture\Visio-8-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: ajaberdo, Plotted: Sep 21, 2022 - 7:17pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
H	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#2BXX #2BXX* #2BXX N/S	EXISTING TREE #2BXX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2BXX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2BXX N/S/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22	SCALE	1" = 20'-0"
DRAWN	KS		CP-1.14
DESIGN	KS/MS	VAULT NO.	
CHECKED	MS		

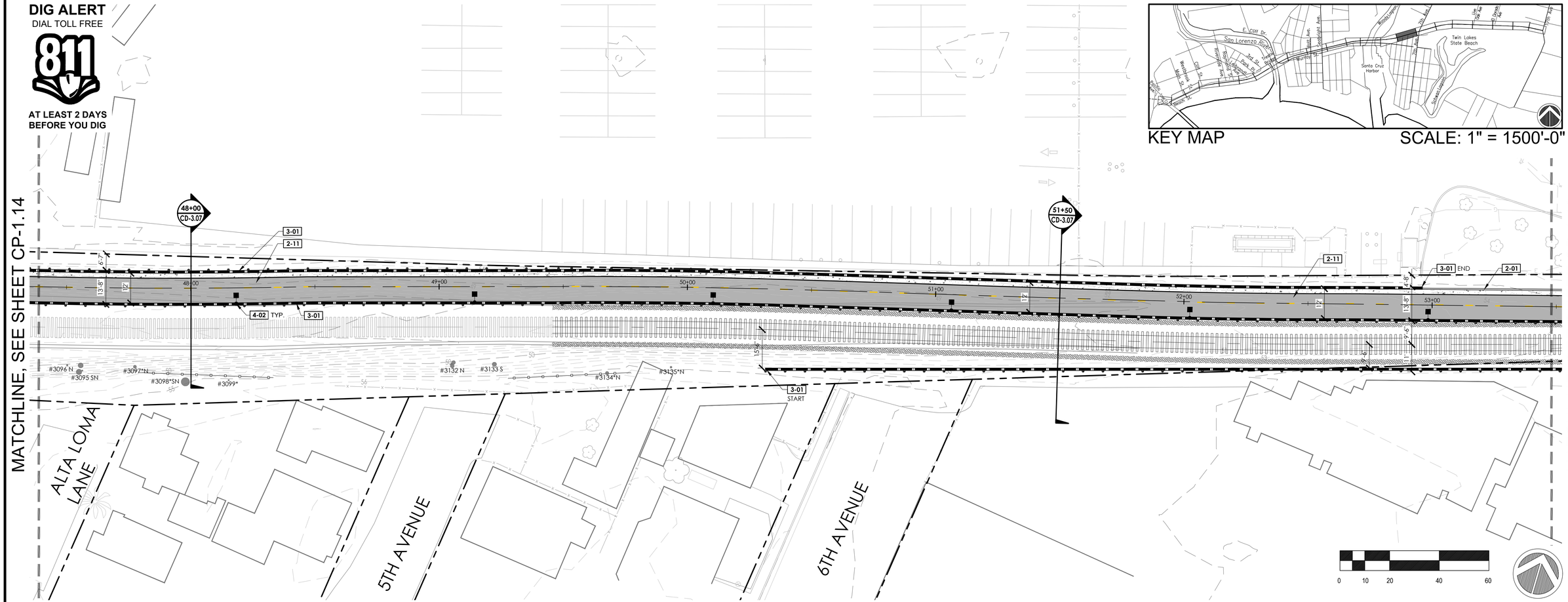
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.14, Images: 1200px-California_Long.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XDWMP-0193-04-RDY.dwg, XDWMP-0193-04-RDY-S9.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, N:\2000\10193-04-RDY\9-Santa Cruz Rail\1 Trail\Landscape Architecture\Tom\B-Schematic Design\Sheet Files\Segment 8\CP-0193-04-RWT-S9.dwg, Plotted By: dpickens, Plotted: Sep 21, 2022 - 7:17pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT-IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
3233 Camino Capistrano, Ste. 355
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	1" = 20'-0"
	CP-1.15
VAULT NO.	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.15, Image: 1200px-California_Flag.png, Prefix: X:\Dir-0193-04-RWT.dwg, XT:-0193-04-RWT-S9.dwg, XCMAP:-0193-04-RWT-S9.dwg, ER Exhibit - 8.5x11.dwg, XC:-0193-04-RWT-S9.dwg, XSB:-0193-04-RWT-S9.dwg, XH:-0193-04-RWT-S9.dwg, XV:\0001\0193-04-RWT\9-Santa Cruz Rail\Trail 8-9\Rail with Trail\Landscape-Architecture\Task-8-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: kjaberg, Plotted: Sep 21, 2022 - 7:18pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

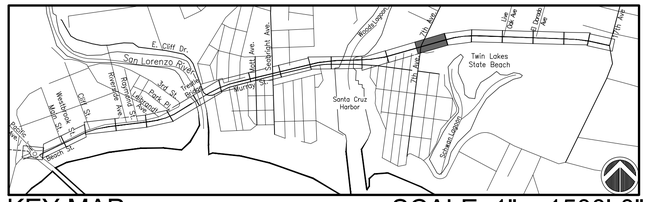
MATCHLINE, SEE SHEET CP-1.15

MATCHLINE, SEE SHEET CP-1.17

7TH AVENUE

HARBOR BEACH COURT

56+20
CD-3.08



KEY MAP

SCALE: 1" = 1500'-0"

0 10 20 40 60

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

COORDINATE CONTROL CONNECTIONS TO RELOCATED DROP ARMS WITH RR COMPANY.

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT-IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"
CP-1.16
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CP-1.16, Image: 1200px-California_Flag.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XDTMMP-0193-04-RDTM.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, N:\2001\10\193-04-RDTM-Santa Cruz-Rail Trail-8-9\Xrefs with Trail\Landscape Architecture\Task-08-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: cjablonski, Plotted: Sep 21, 2022 - 7:19pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX NATIVE	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX NATIVE: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"
CP-1.17
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

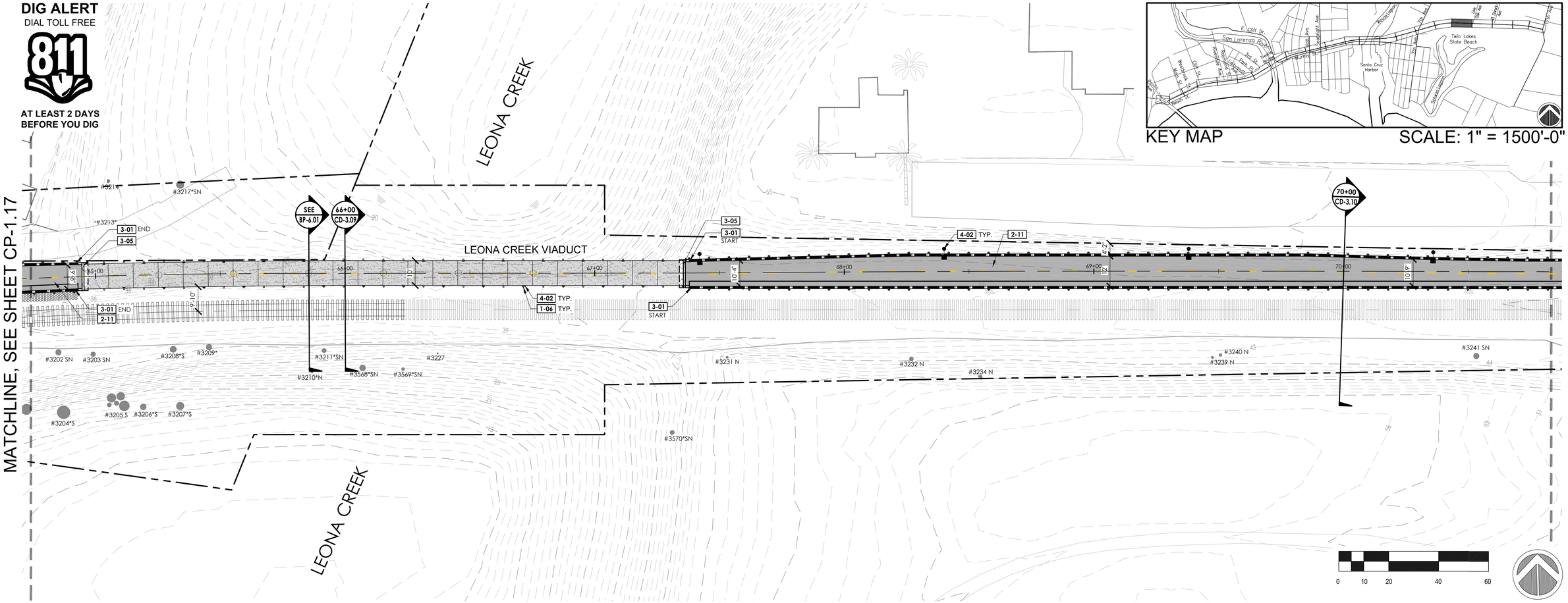
Layout Tab Name: CP-1.17, Images: 1200ac-California...1.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XDNMP-0193-04-RCH.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, N:\000\10193-04-8619-Santa Cruz Rail Trail-8-9\All with Trail\Landscape-Architecture\Task-B-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: kjackens, Plotted: Sep 21, 2022 - 7:18am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

MATCHLINE, SEE SHEET CP-1.17

LEONA CREEK

LEONA CREEK VIADUCT



KEY MAP

SCALE: 1" = 1500'-0"

0 10 20 40 60

MATCHLINE, SEE SHEET CP-1.19

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/V/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/V/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
	LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"

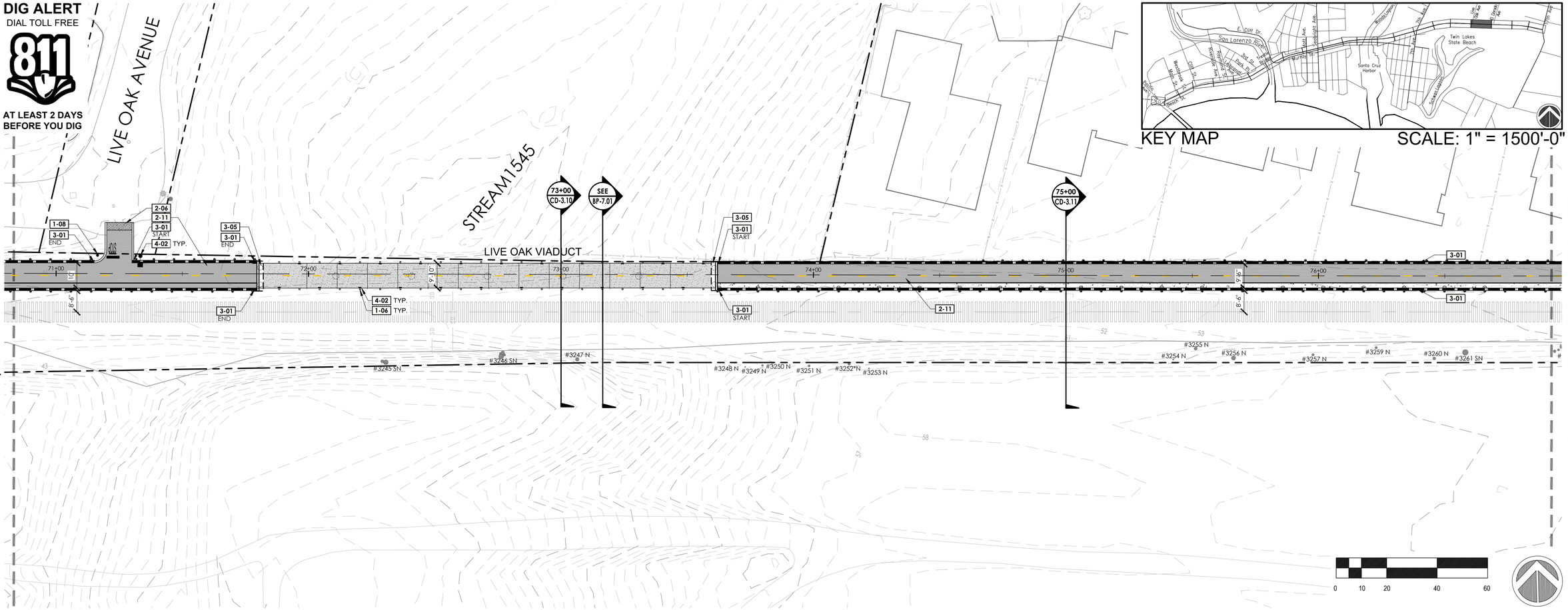
CP-1.18

VAULT NO.

Layout Tab Name: CP-1.18, Images: 1200px-California_1.svg.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XCNMP-0193-04-RCP-S9.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XER-0193-04-RWT-S9.dwg, XPP-0193-04-RWT-S9.dwg, N:\0001\0193-04-RCP\Santa Cruz-Rail-Trail-8-9\Civil with Trail\Landscape-Architecture\Task-8-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: rmmateos, Plotted: Sep 22, 2022 - 10:45am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

MATCHLINE, SEE SHEET CP-1.18



KEY MAP

SCALE: 1" = 1500'-0"

MATCHLINE, SEE SHEET CP-1.20

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/*/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/*/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
	LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

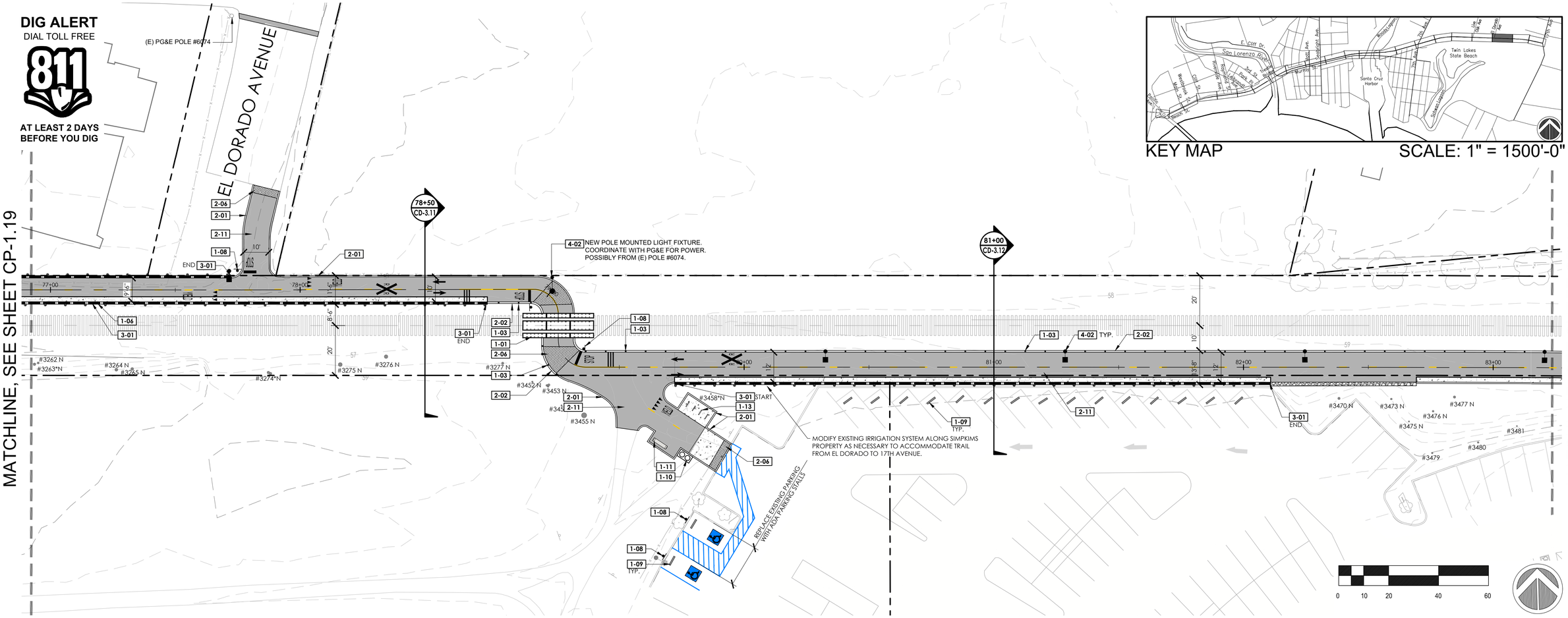
SCALE 1" = 20'-0"

CP-1.19

VAULT NO.

Layout Tab Name: CP-1.19, Images: 1200px-California_Legal.png, Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT.dwg, XCMAP-0193-04-RS19.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, N:\2000\10193-04-RS19-Santa Cruz Rail Trail-8-#\Rail with Trail\Landscape Architecture\Task-8-Schematic Design\Sheet Files\Segment 8\CP-0193-04-RWT-S9.dwg, Plotted By: dpickens, Plotted: Sep 21, 2022 - 7:18am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"

MATCHLINE, SEE SHEET CP-1.19

MATCHLINE, SEE SHEET CP-1.21

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/P/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

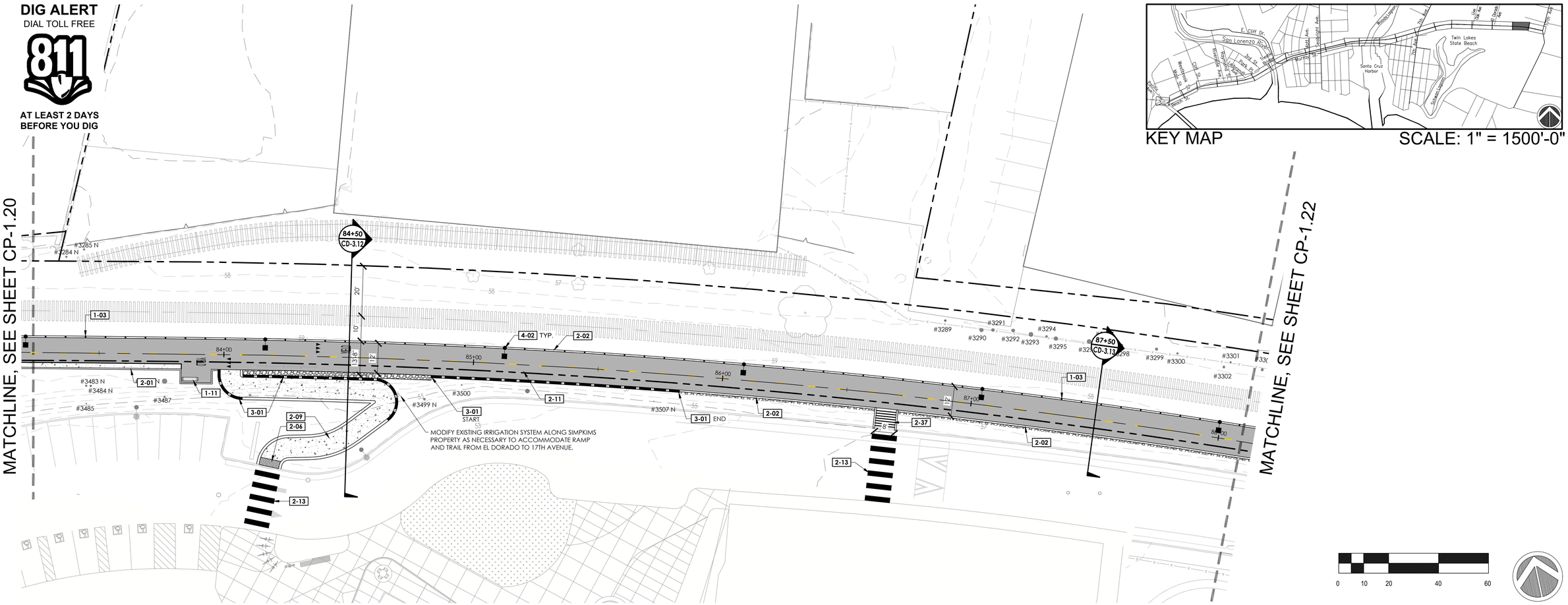
DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	1" = 20'-0"
	CP-1.20
VAULT NO.	

SHEET 23 OF 53

Layout Tab Name: CP-1.20, Images: 1200px-California_1.svg.png , Xrefs: RTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, KEYMAP-0193-04-RWT-S9.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg
N:\2021\0193-04-RCTB-Santa-Cruz-Rail-Trail-8-9\Civil Trail\Landscape-Architecture\Task-4b-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: ebadeeb, Plotted: Sep 21, 2022 - 7:18am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)
FINAL SCHEMATIC PLANS

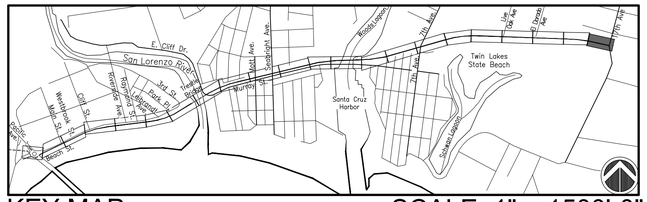
REFERENCES
FIELD BOOK:
DRAWING #: CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	1" = 20'-0"
	CP-1.21
VAULT NO.	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

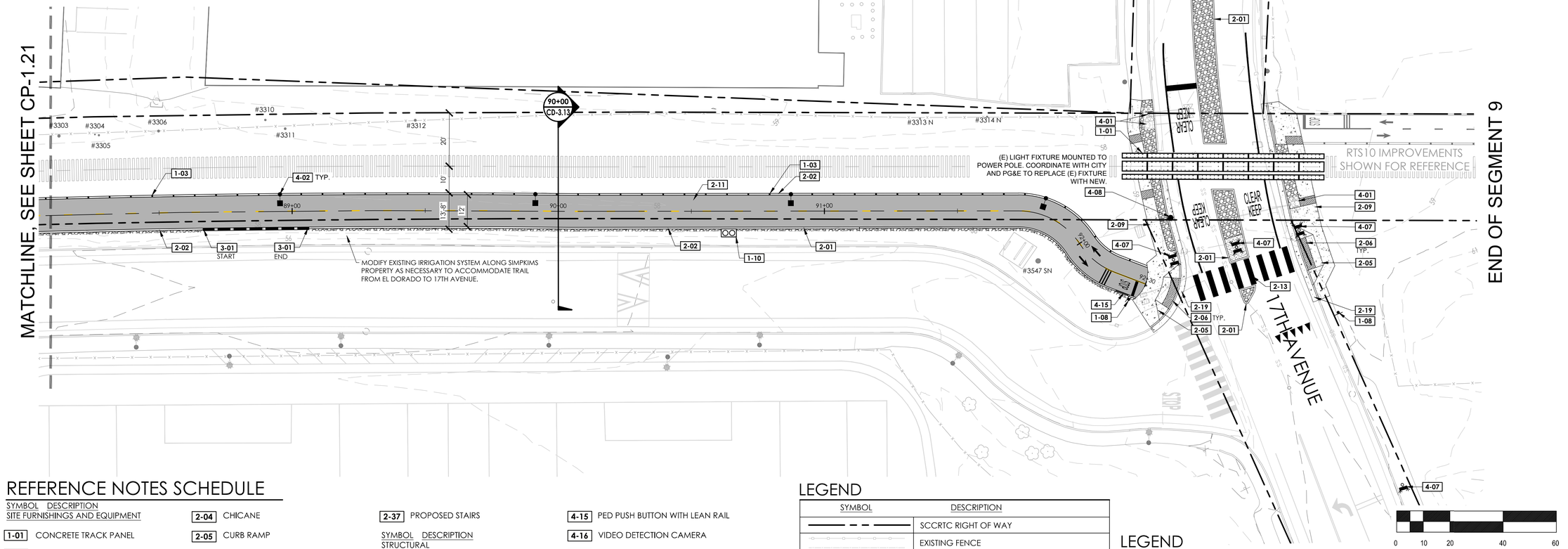
Layout Tab Name: CP-1.21, Images: 1200px-California_1.svg.png , Xrefs: XTB-0193-04-RWT.dwg, XT-0193-04-RWT-S9.dwg, XEMAPB-0193-04-RCT.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg
N:\000\10193-04-RCT\9-Santa Cruz-Rail-Trail-8-9\Rail with Trail\Landscape-Architecture\Task-6-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: ejaberia, Plotted: Sep 21, 2022 - 7:19am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

- 1-01 CONCRETE TRACK PANEL
- 1-03 SEPARATION FENCE
- 1-05 CHAINLINK FENCE
- 1-06 GUARDRAIL SYSTEM
- 1-08 PROPOSED SIGN
- 1-09 CONCRETE WHEEL STOP
- 1-10 TRASH RECEPTACLES
- 1-11 BENCH
- 1-12 WOOD FENCE
- 1-13 BIKE RACKS

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

- 2-01 6" WIDE CURB
- 2-02 8" WIDE CURB
- 2-04 CHICANE
- 2-05 CURB RAMP
- 2-06 DETECTABLE WARNING SURFACE
- 2-08 ROLLED CURB
- 2-09 CONCRETE SIDEWALK
- 2-10 HMA PAVEMENT (ROAD)
- 2-11 HMA PAVEMENT (TRAIL)
- 2-12 CLASS II BIKE CROSSING MARKINGS
- 2-13 CONTINENTAL CROSSWALK STRIPING
- 2-14 CROSSBIKE MARKINGS
- 2-16 SHARROW MARKINGS
- 2-19 6" CURB AND GUTTER
- 2-20 DRIVEWAY
- 2-22 CONCRETE BAND
- 2-24 BIKE LANE, GREEN ACRYLIC COATING
- 2-37 PROPOSED STAIRS

SYMBOL DESCRIPTION
STRUCTURAL

- 3-01 RETAINING WALL, SEE WP SHEETS
- 3-05 ABUTMENT

SYMBOL DESCRIPTION
UTILITIES

- 4-01 PIP EXISTING EQUIPMENT
- 4-02 PROPOSED LIGHT
- 4-04 RELOCATED RAIL EQUIPMENT
- 4-06 RELOCATED LIGHT
- 4-07 POST MOUNTED SOLAR RECTANGULAR RAPID FLASHING BEACON (RRFB)
- 4-08 NEW LIGHT FIXTURE ON EXISTING POLE
- 4-11 NEW MAST ARM POLE
- 4-12 RELOCATED MAST ARM POLE
- 4-15 PED PUSH BUTTON WITH LEAN RAIL
- 4-16 VIDEO DETECTION CAMERA
- 4-17 RELOCATED UTILITY POLE
- 4-18 COMBINED PEDESTRIAN PUSH BUTTON AND SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	VIADUCT/BRIDGE GUARDRAIL
	RETAINING WALL
	RETAINING WALL WITH GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/P/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/P/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK (TYPE 1) SURFACE MOUNTED WALLPACK (TYPE 2) RECESSED LIGHT-IN POST IN-GROUND LIGHT	PROPOSED LIGHTS
	PROPOSED NEW TRACK

LEGEND

SYMBOL	DESCRIPTION
	CONCRETE PAVEMENT
	HMA PAVEMENT
	VIADUCT WITH FIBERGLASS REINFORCED POLYMER DECK
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK
	3"-5" COBBLE
	DECOMPOSED GRANITE
	FRENCH DRAIN

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

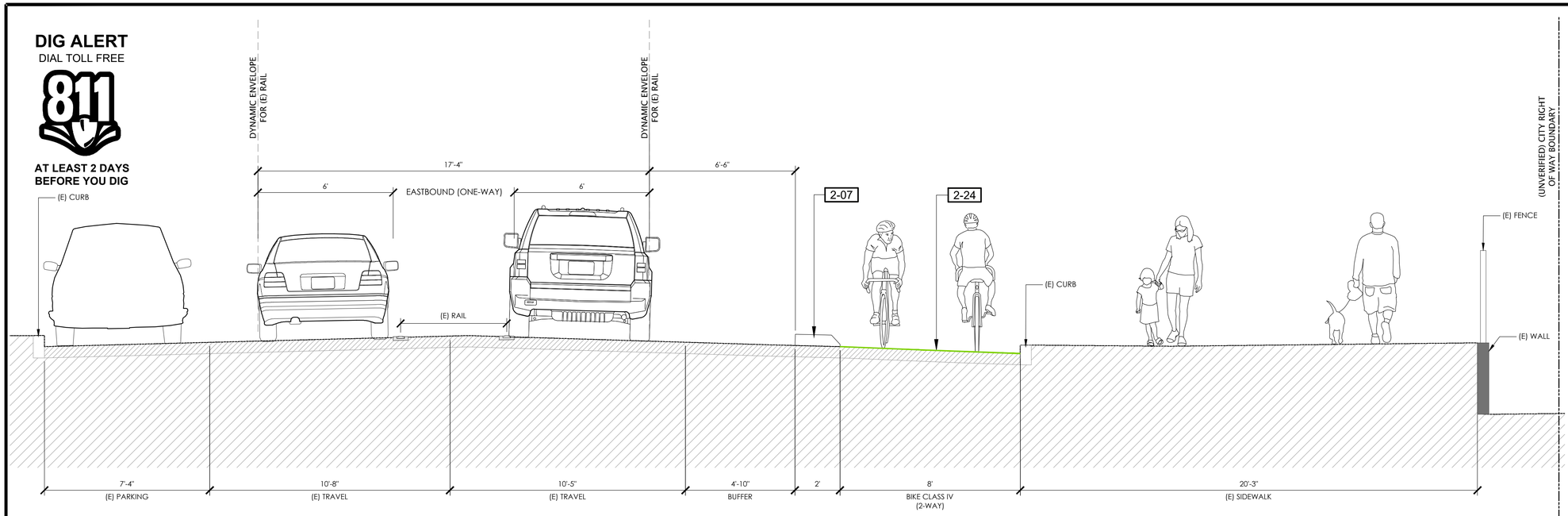
DRAWING #:
CP-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	1" = 20'-0"
	CP-1.22
VAULT NO.	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

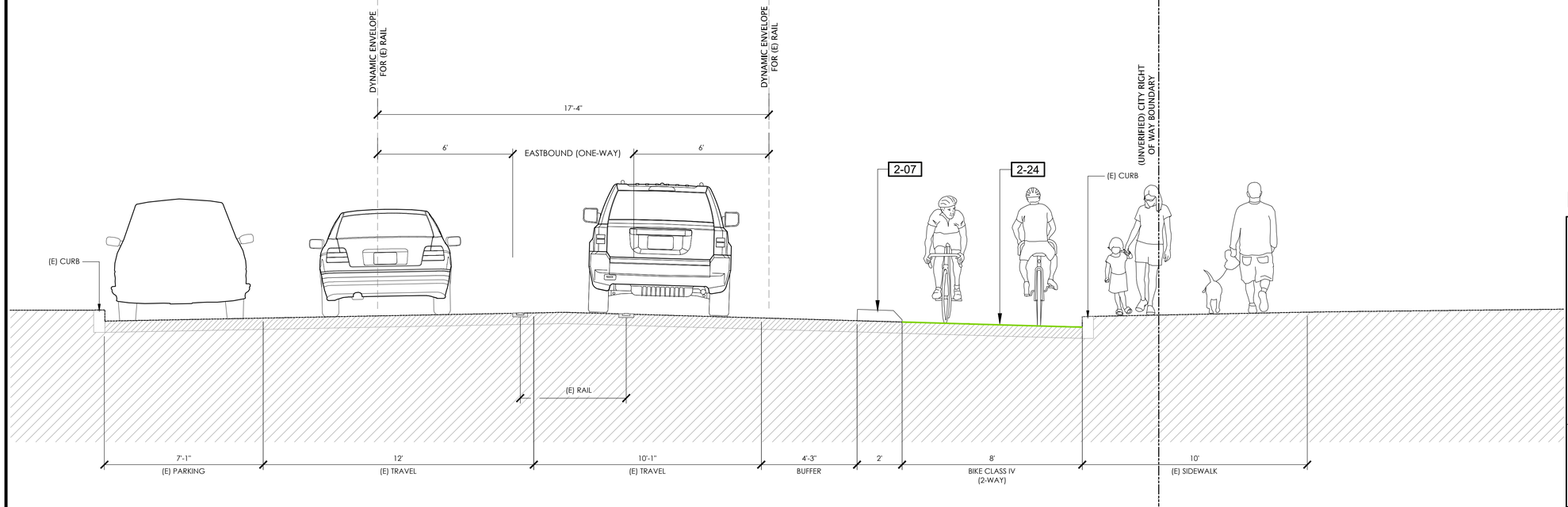
Layout Tab Name: CP-1.22, Images: 1200px-California_1.svg.png, Xrefs: RTB-0193-04-RWT.dwg, ST-0193-04-RWT-S9.dwg, XTOWR-0193-04-RWT-S9.dwg, ER Exhibit - 8.5x11.dwg, XC-0193-04-RWT-S9.dwg, XSB-0193-04-RWT-S9.dwg, XH-0193-04-RWT-S9.dwg, XM-0193-04-RWT-S9.dwg, XN-0193-04-RWT-S9.dwg, N:\000\0193-04-RCTB-Santa Cruz Rail Trail-8-9\Rail trail\Landscape-Architecture\Plan-8-Schematic Design\Sheet-Files\Segment 9\CP-0193-04-RWT-S9.dwg, Plotted By: ejaderick, Plotted: Sep 21, 2022 - 7:19pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



13+63

SCALE 3/8"=1'-0"



19+50

SCALE 3/8"=1'-0"

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	POST AND WIRE FENCE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
3-01	RETAINING WALL, SEE WP SHEETS

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

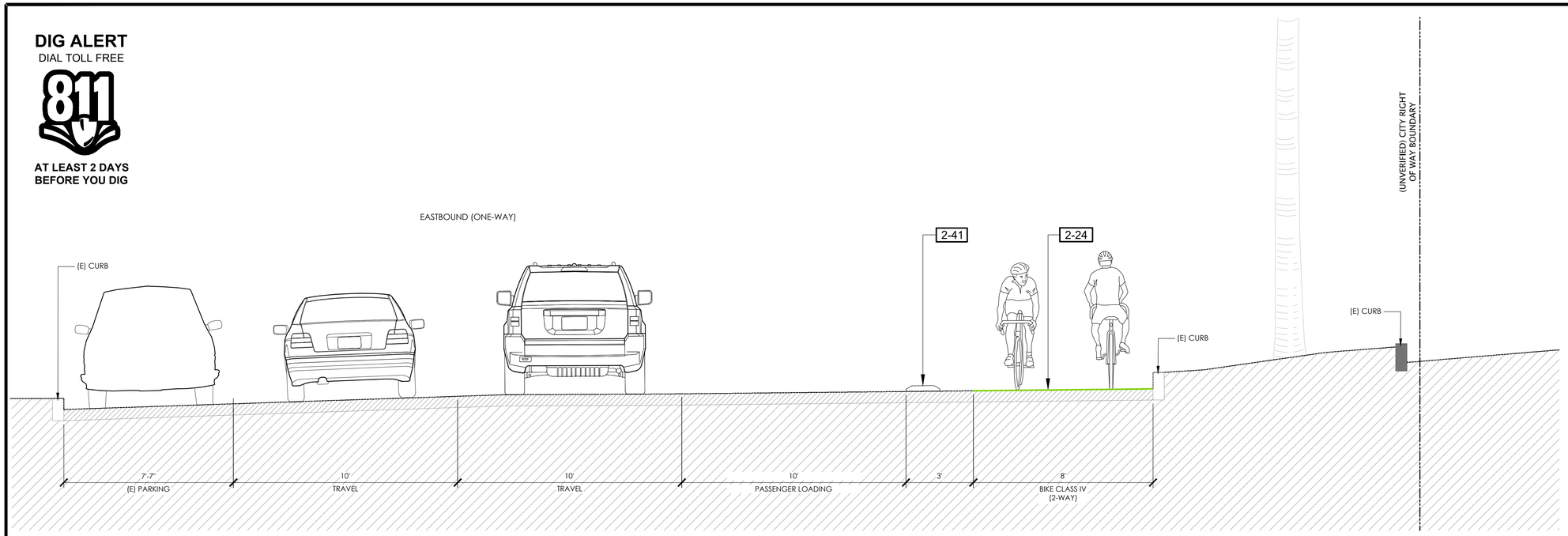
TRAIL SECTIONS

REFERENCES
FIELD BOOK:
DRAWING #: SEC-0193-04-RWT-S8

DATE	09/21/22	SCALE	AS SHOWN
DRAWN	KS		CD-2.01
DESIGN	KS/MS	VAULT NO.	
CHECKED	MS		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

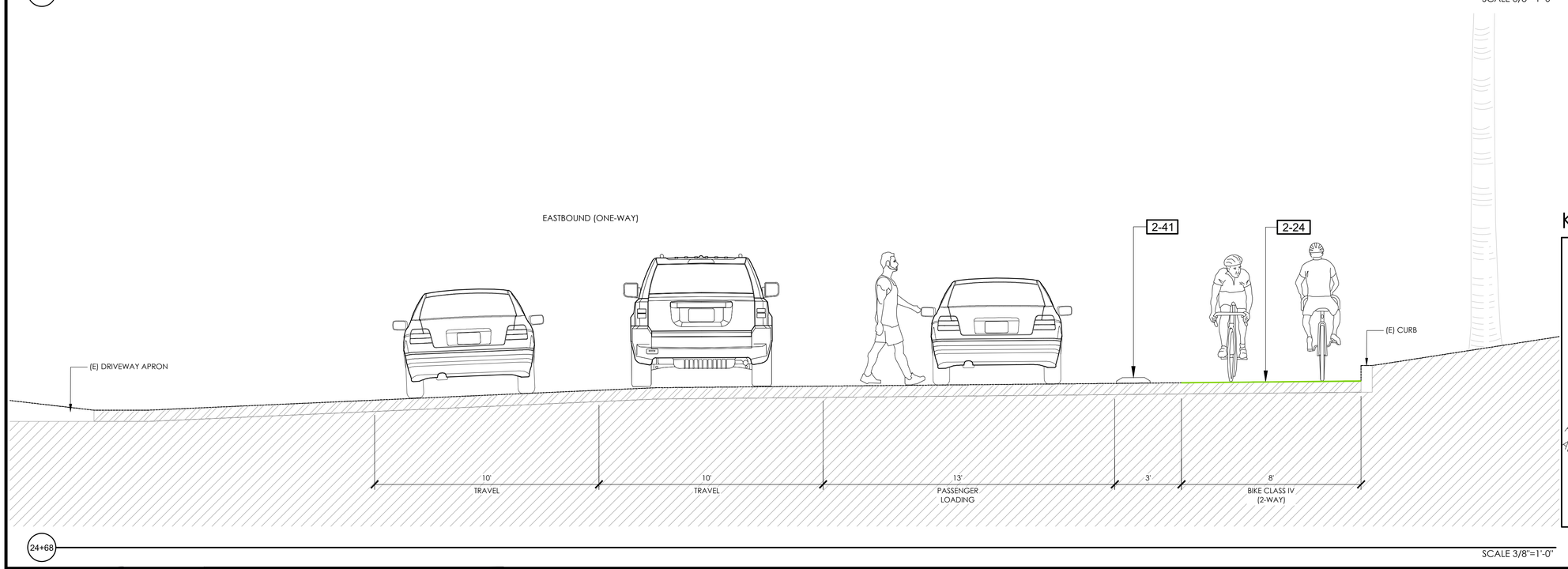
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	POST AND WIRE FENCE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
3-01	RETAINING WALL, SEE WP SHEETS

NOTE: REFER TO WD SHEETS FOR WALL DETAILS



KEY MAP

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES
FIELD BOOK:
DRAWING #: SEC-0193-04-RWT-S8

DATE	09/21/22	SCALE	AS SHOWN
DRAWN	KS		CD-2.02
DESIGN	KS/MS	VAULT NO.	
CHECKED	MS		

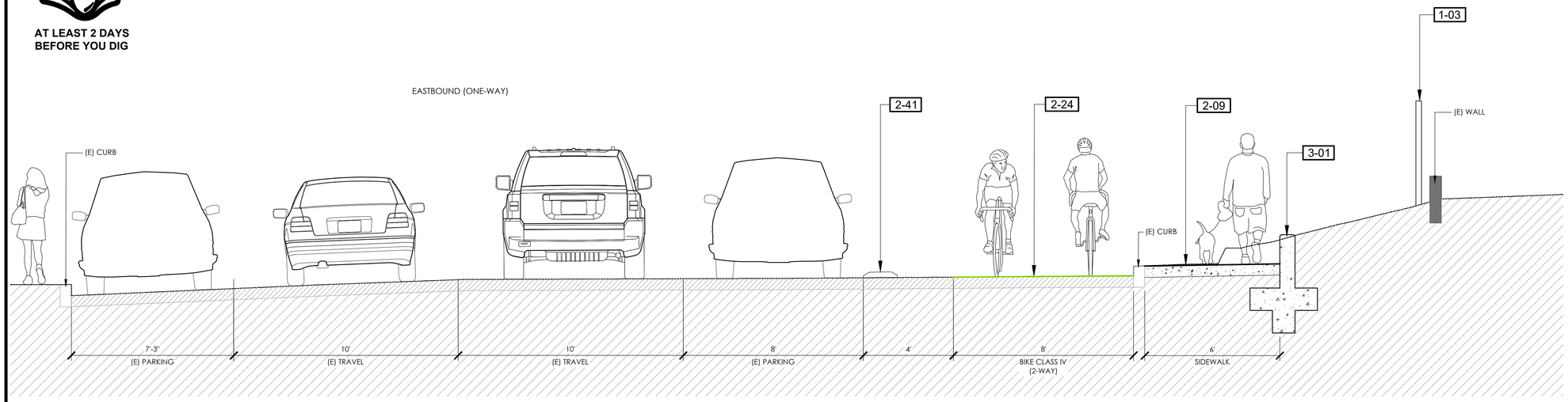
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

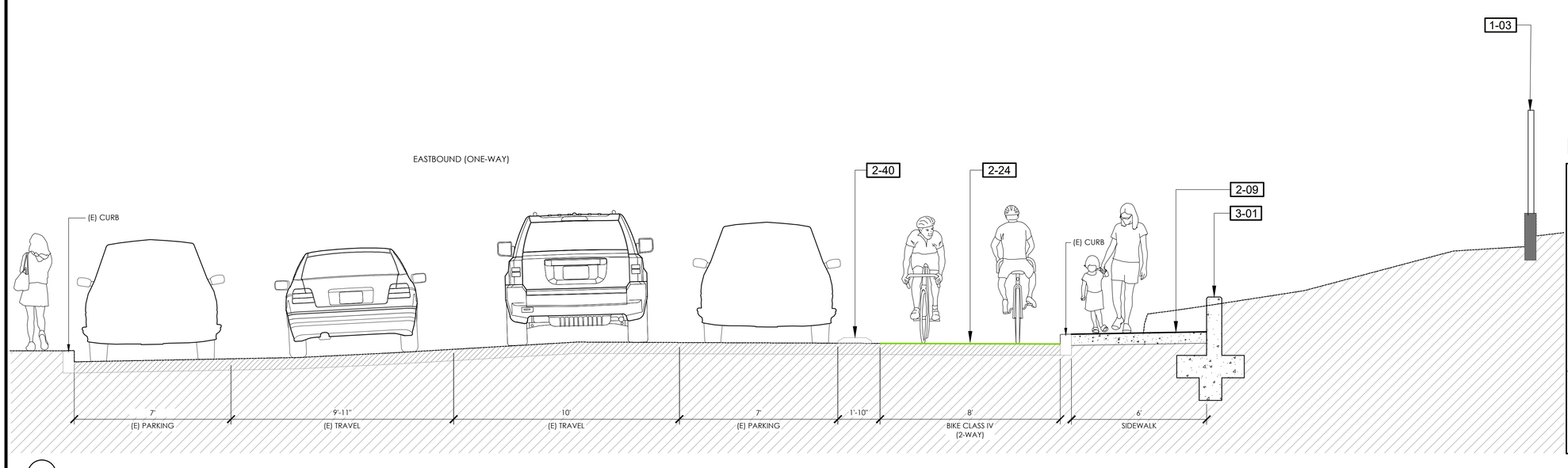
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

REFERENCE NOTES SCHEDULE

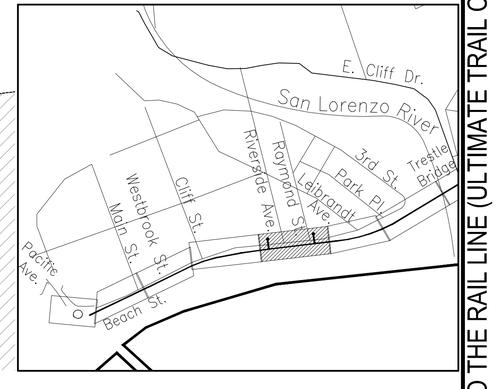
SYMBOL	DESCRIPTION
1-03	POST AND WIRE FENCE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
3-01	RETAINING WALL, SEE WP SHEETS

NOTE: REFER TO WD SHEETS FOR WALL DETAILS





KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

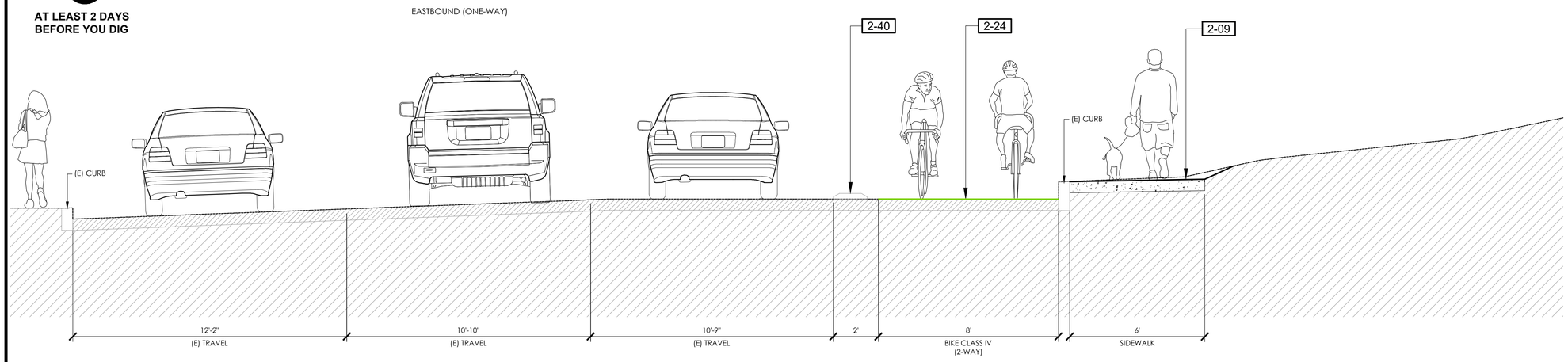
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-2.03	
DRAWING #: SEC-0193-04-RWT-S8	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

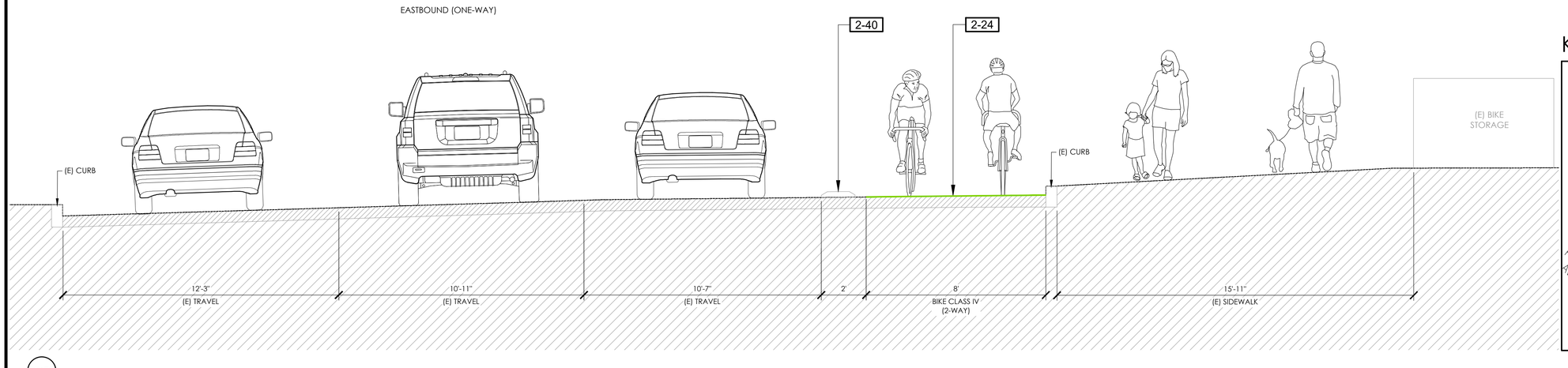
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	POST AND WIRE FENCE
2-07	TAPERED CURB
2-09	CONCRETE SIDEWALK
2-24	BIKE LANE, GREEN ACRYLIC COATING
2-40	PIP EXISTING VULCANIZED RUBBER DIVIDER
2-41	VULCANIZED RUBBER DIVIDER
3-01	RETAINING WALL, SEE WP SHEETS

NOTE: REFER TO WD SHEETS FOR WALL DETAILS



KEY MAP

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

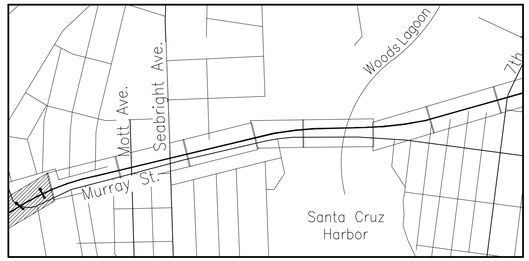
REFERENCES
FIELD BOOK:
DRAWING #: SEC-0193-04-RWT-S8

DATE	09/21/22	SCALE	AS SHOWN
DRAWN	KS		CD-2.04
DESIGN	KS/MS	VAULT NO.	
CHECKED	MS		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP



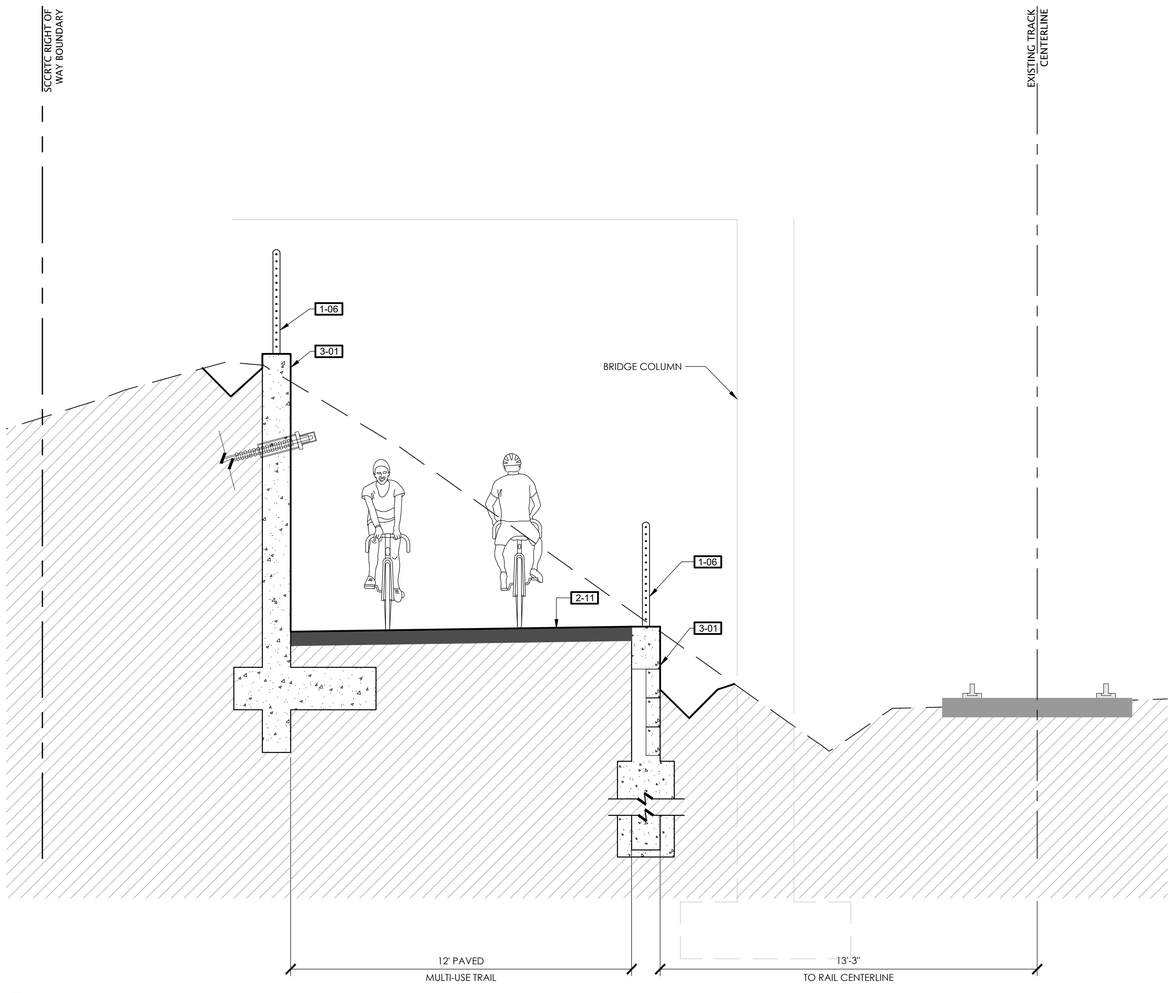
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE

SYMBOL	DESCRIPTION
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

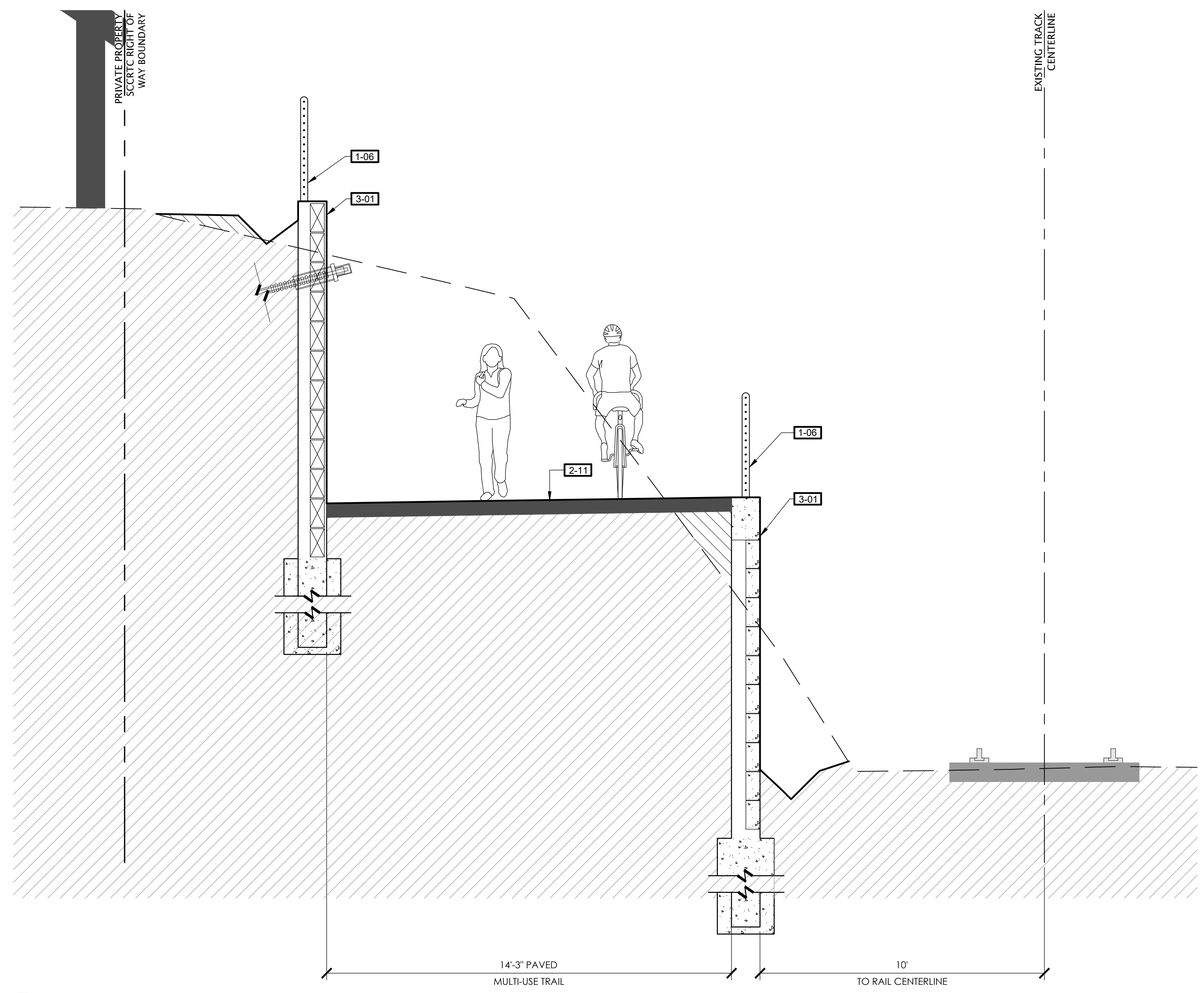
SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS



10+50

SCALE 3/8"=1'-0"



12+50

SCALE 3/8"=1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

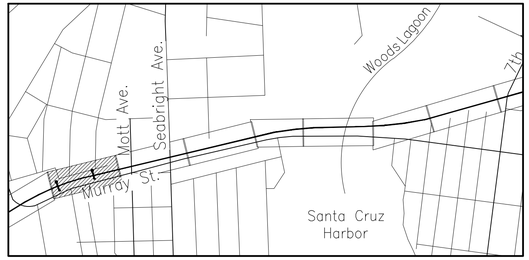
TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.01	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP



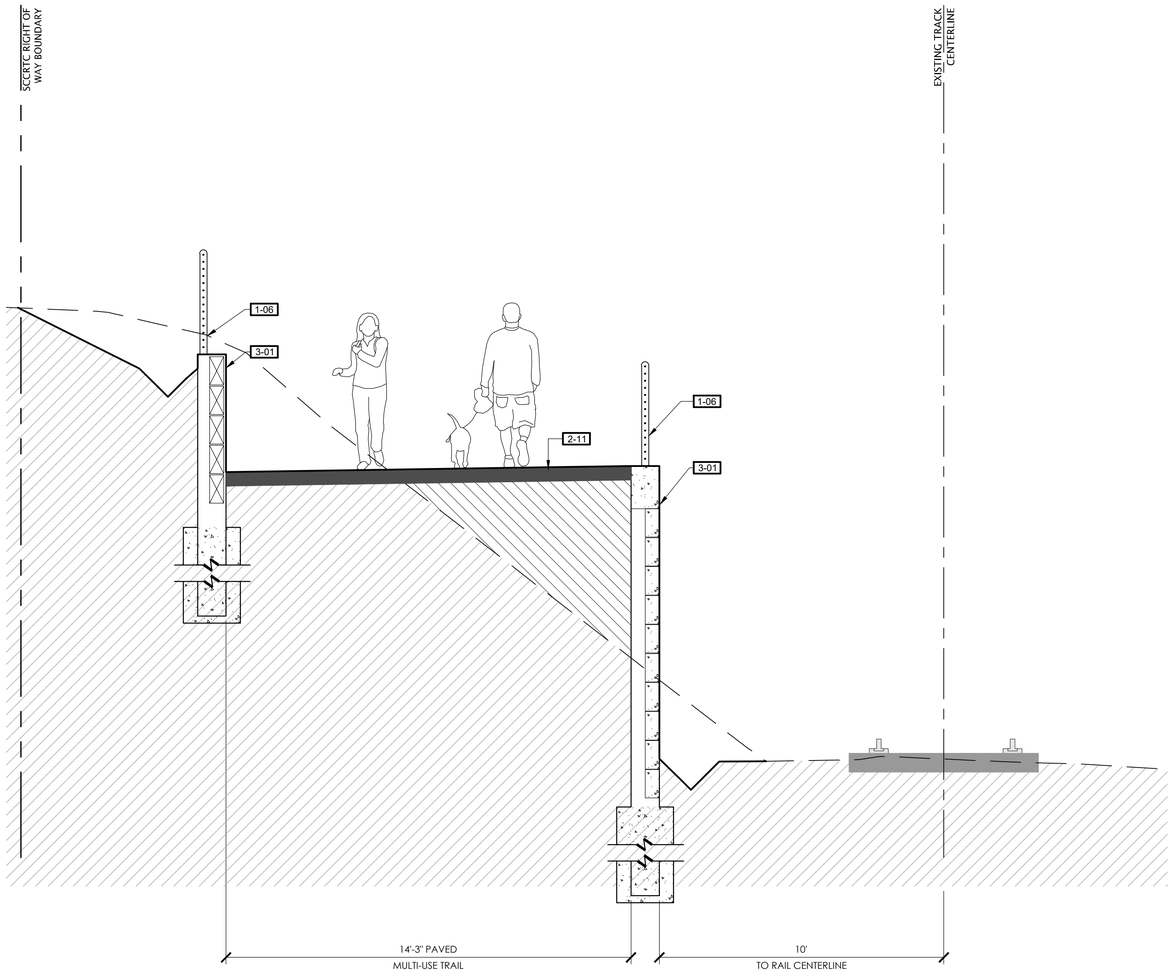
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE

SYMBOL	DESCRIPTION
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

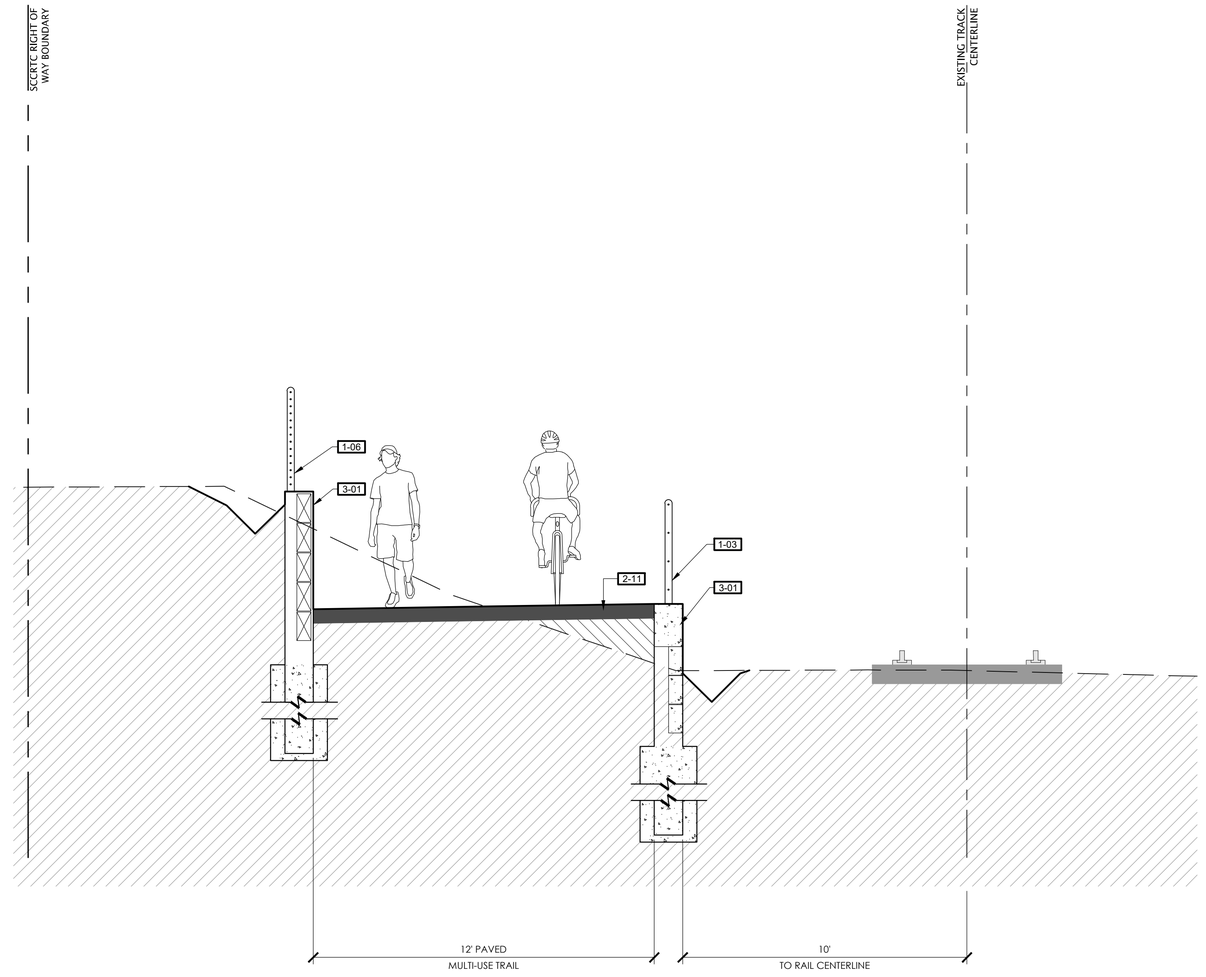
SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS



14+25

SCALE 3/8"=1'-0"



17+50

SCALE 3/8"=1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

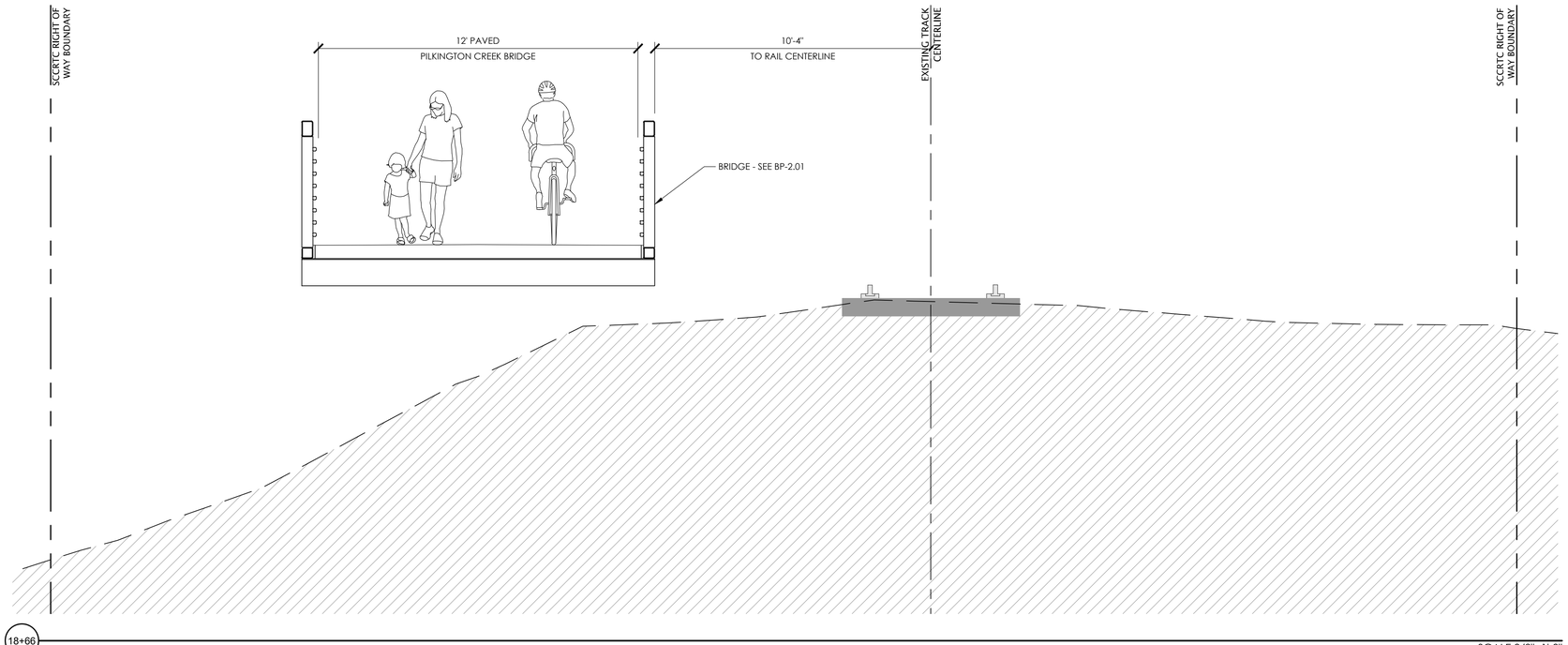
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.02	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



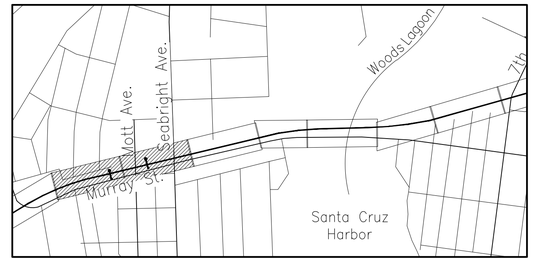
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

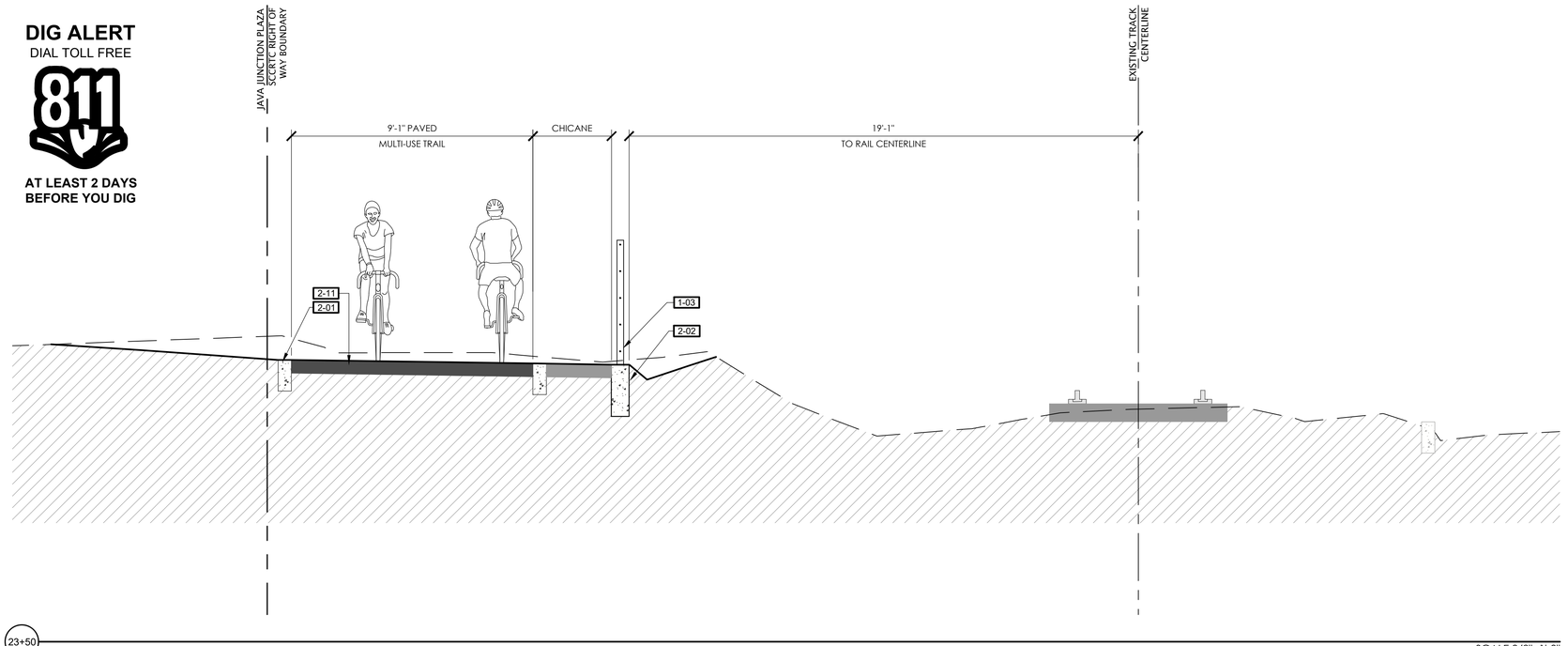
RAIL TRAIL SEGMENTS 8 & 9

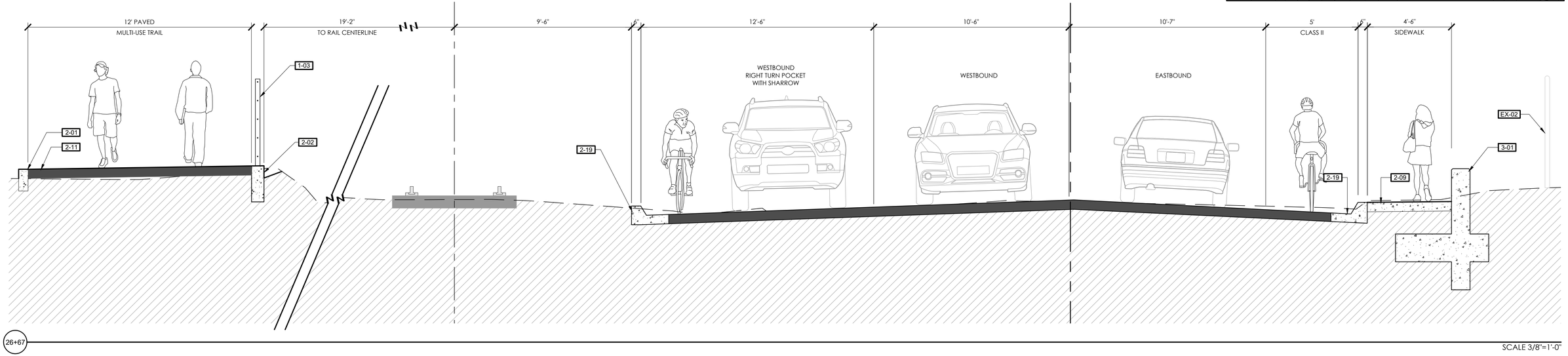
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.03	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





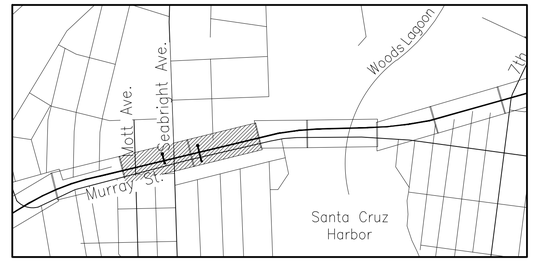
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS		

CITY OF SANTA CRUZ
CITY OF SANTA CRUZ 1866 CALIFORNIA
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RWT-S9

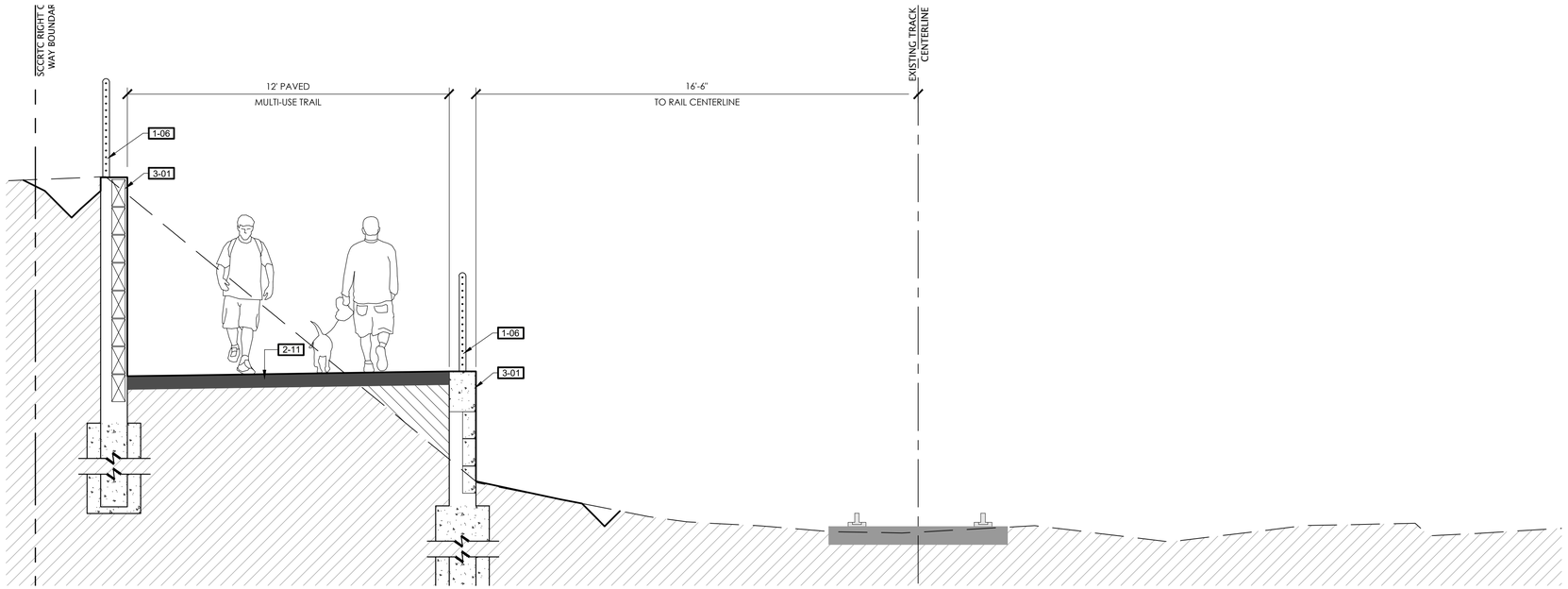
DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CD-3.04
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CD-3.04, Images: ..\refs\ XTR-0193-04-RWT.dwg
N:\2000\0193-04-RC19-Santa Cruz-Rail Trail-8-9\Rail with Trail\Landscape-Architecture\Trail-8-Schematic Design\Sheet-Files\Segment 9\SEC-0193-04-RWT-S9.dwg, Plotted By: KMSzabelski, Plotted: Sep 21, 2022 - 8:48pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



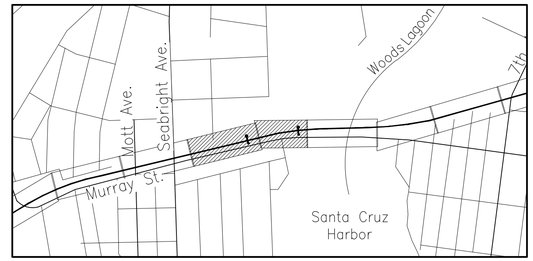
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

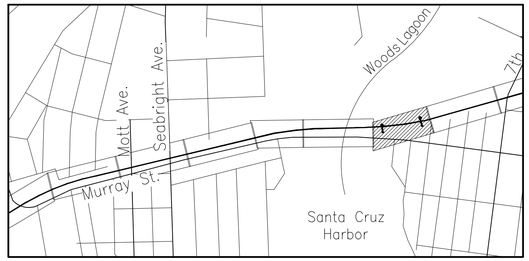
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.05	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP



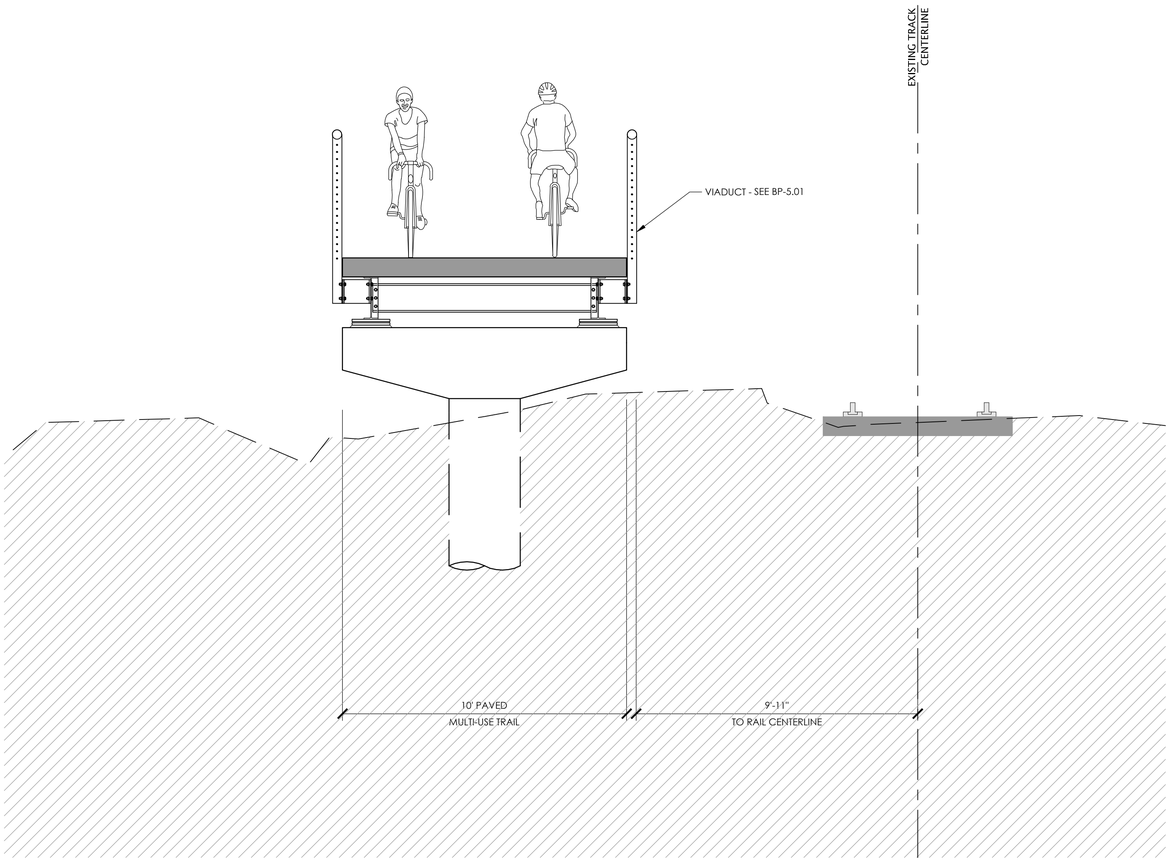
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE

SYMBOL	DESCRIPTION
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

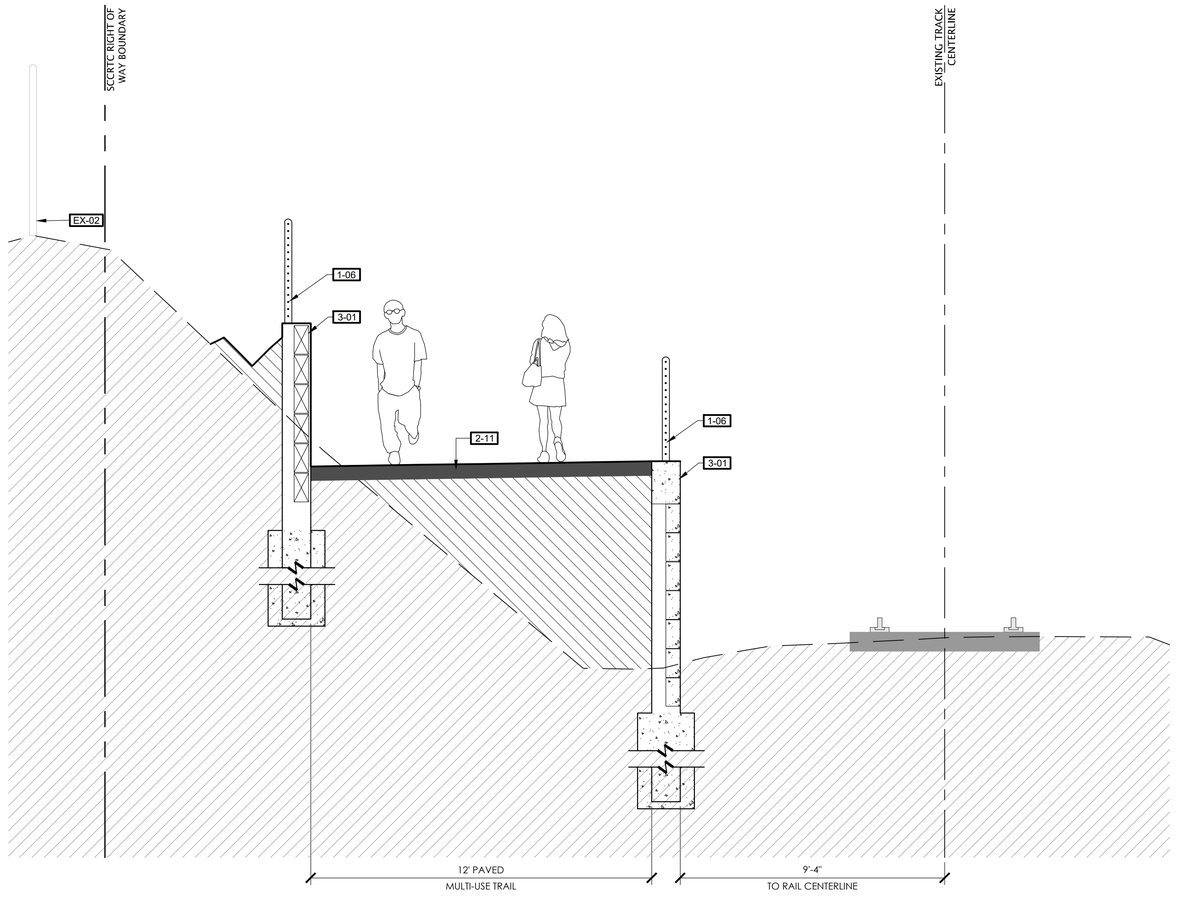
SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS



43+15

SCALE 3/8"=1'-0"



46+60

SCALE 3/8"=1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

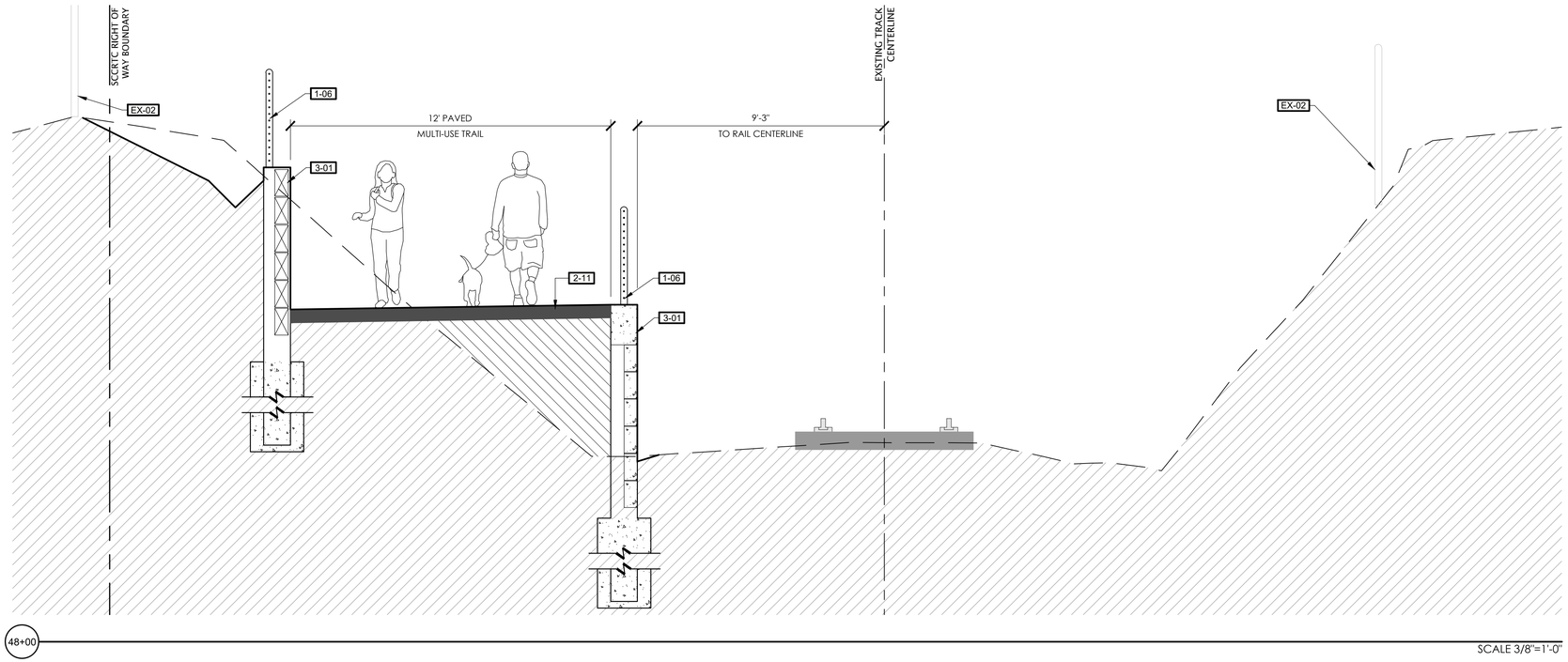
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

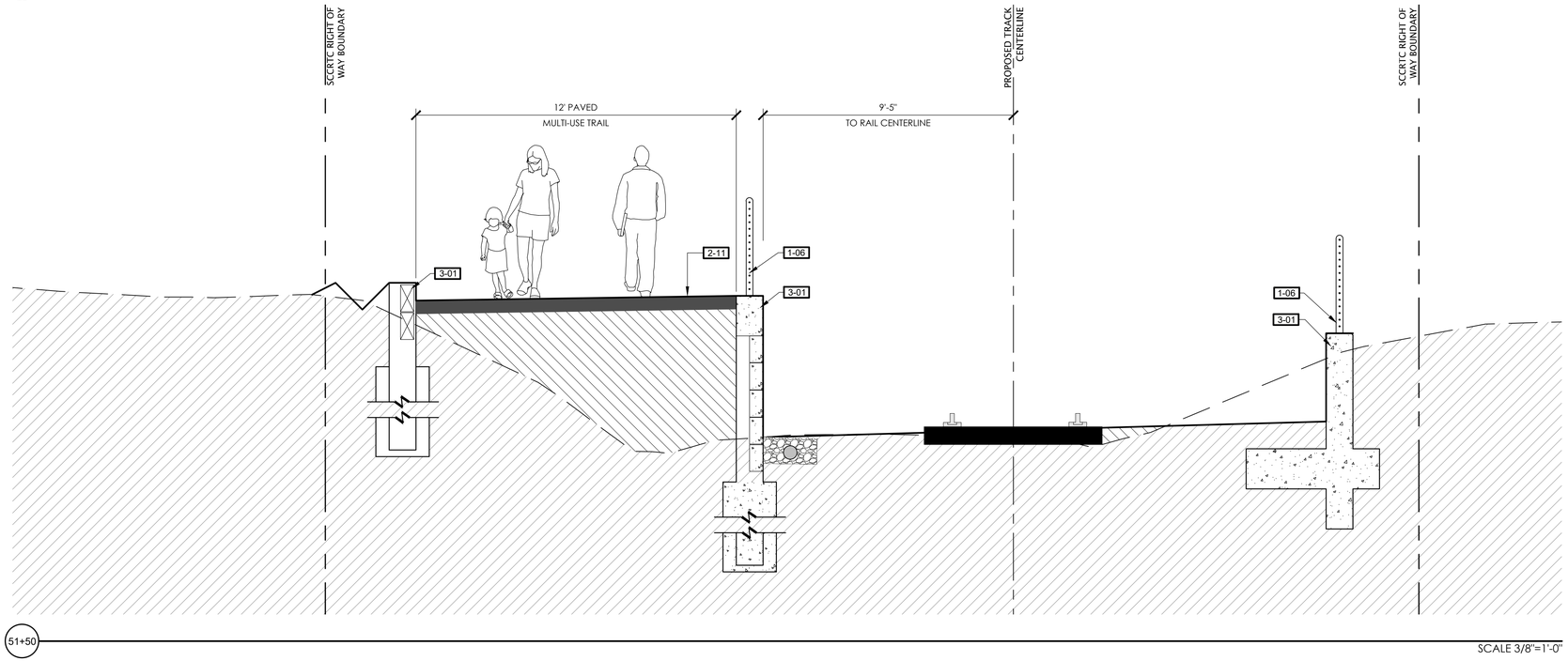
TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.06	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





REFERENCE NOTES SCHEDULE

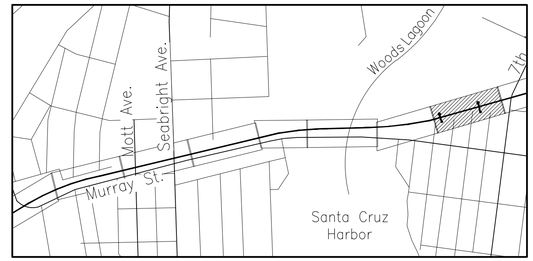
SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

EXISTING TO REMAIN

SYMBOL	DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: CD-3.07 | Xrefs: XTB-0193-04-RWT.dwg
N:\2001\10\193-04-RCTB-Santa Cruz-Rail Trail-B-SV\Eol with Trail\Landscape-Architecture\Trail-B-Schematic Design\Sheet-Files\Segment 9\SEC-0193-04-RWT-S9.dwg, Plotted By: KMSubbiah, Plotted: Sep 21, 2022 - 8:48pm

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

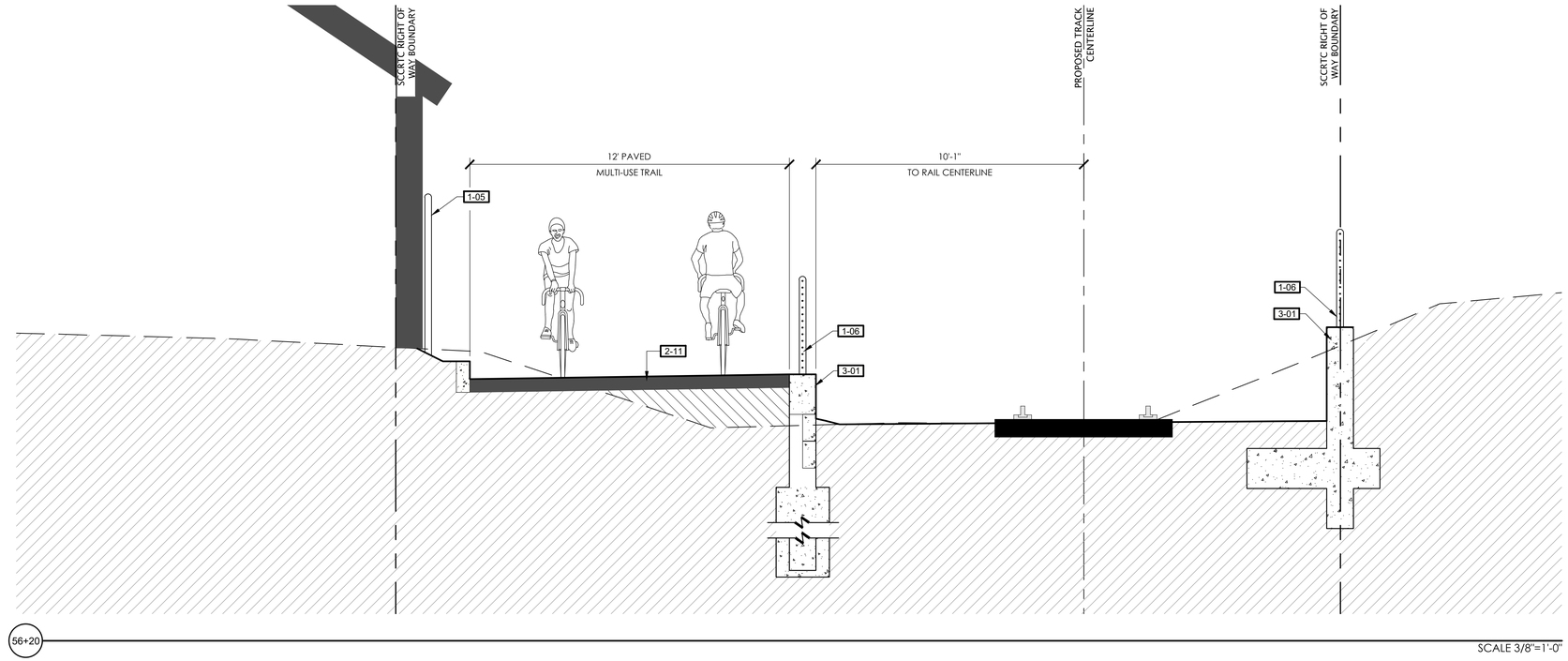
TRAIL SECTIONS

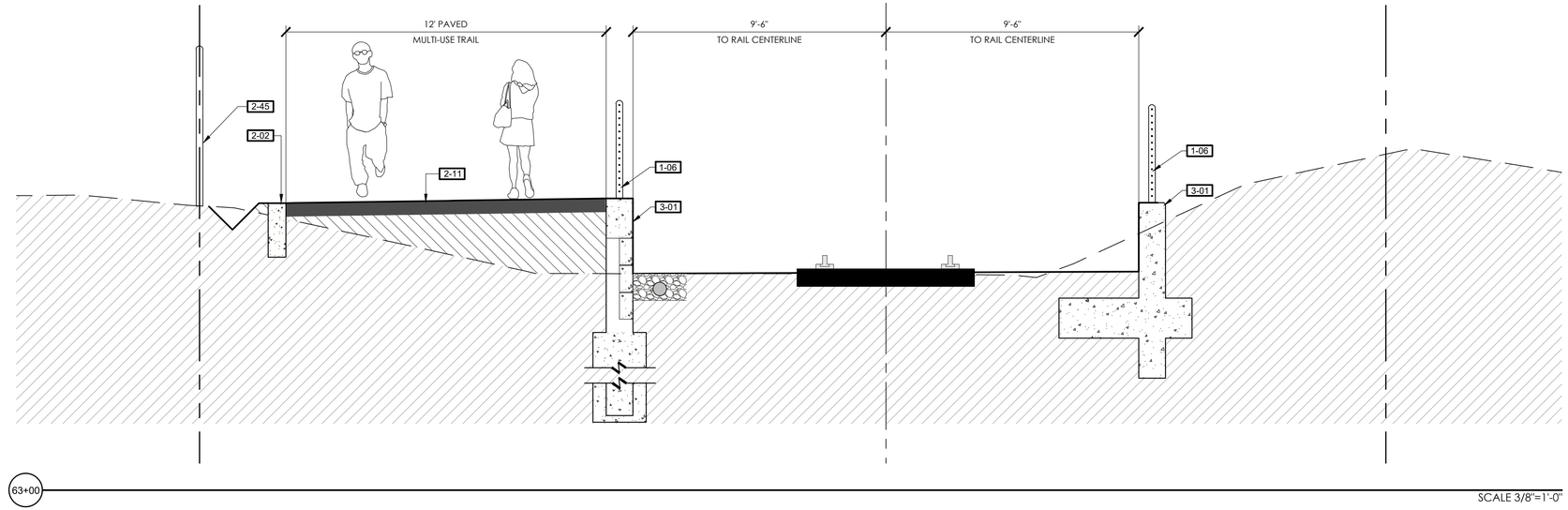
REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	AS SHOWN
	CD-3.07
VAULT NO.	

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





REFERENCE NOTES SCHEDULE

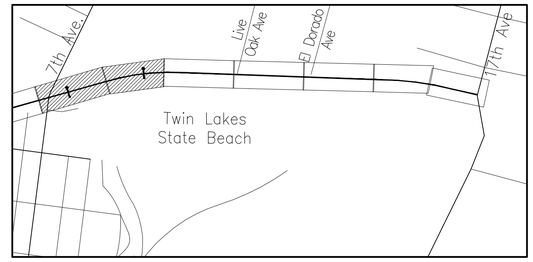
SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

EXISTING TO REMAIN

SYMBOL	DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

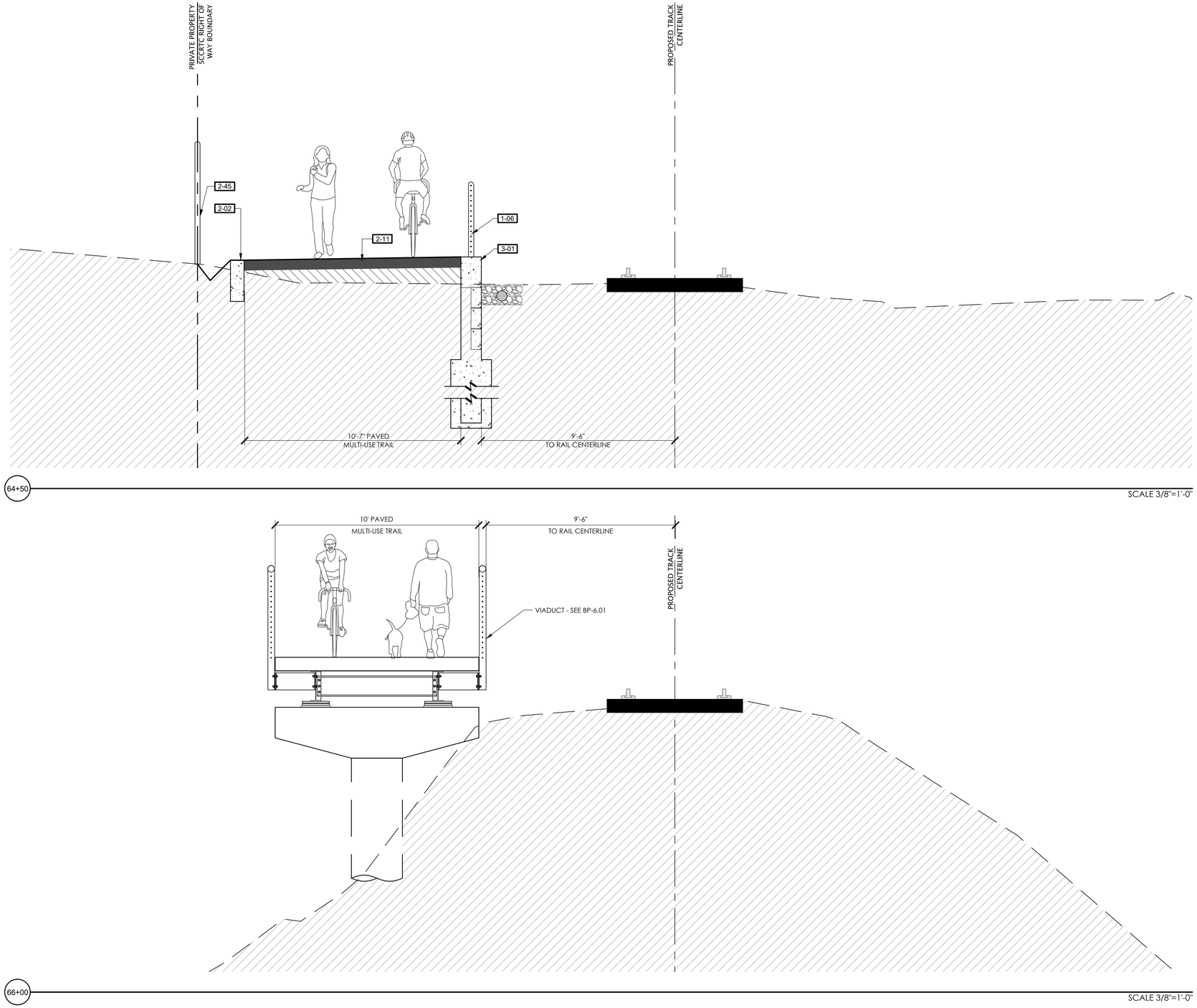
REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RWT-S9

DATE	09/21/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS
SCALE	AS SHOWN
	CD-3.08
VAULT NO.	

Layout Tab Name: CD-3.08 Images: Xrefs: XTB-0193-04-RWT.dwg
N:\DOT\0193-04-RC19-Santa Cruz Rail Trail-8-9\Rail with Trail\Landscape-Architecture\Task-8-Schematic Design\Sheet-Plan\Segment 9\SEC-0193-04-RWT-S9.dwg, Plotted By: KMSchofield, Plotted: Sep 21, 2022 - 8:48pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



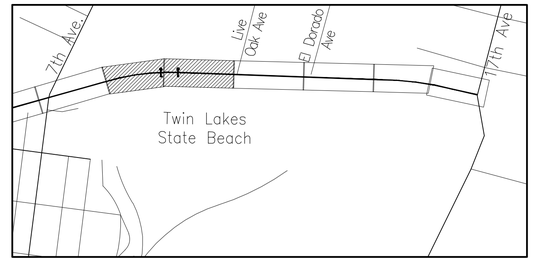
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

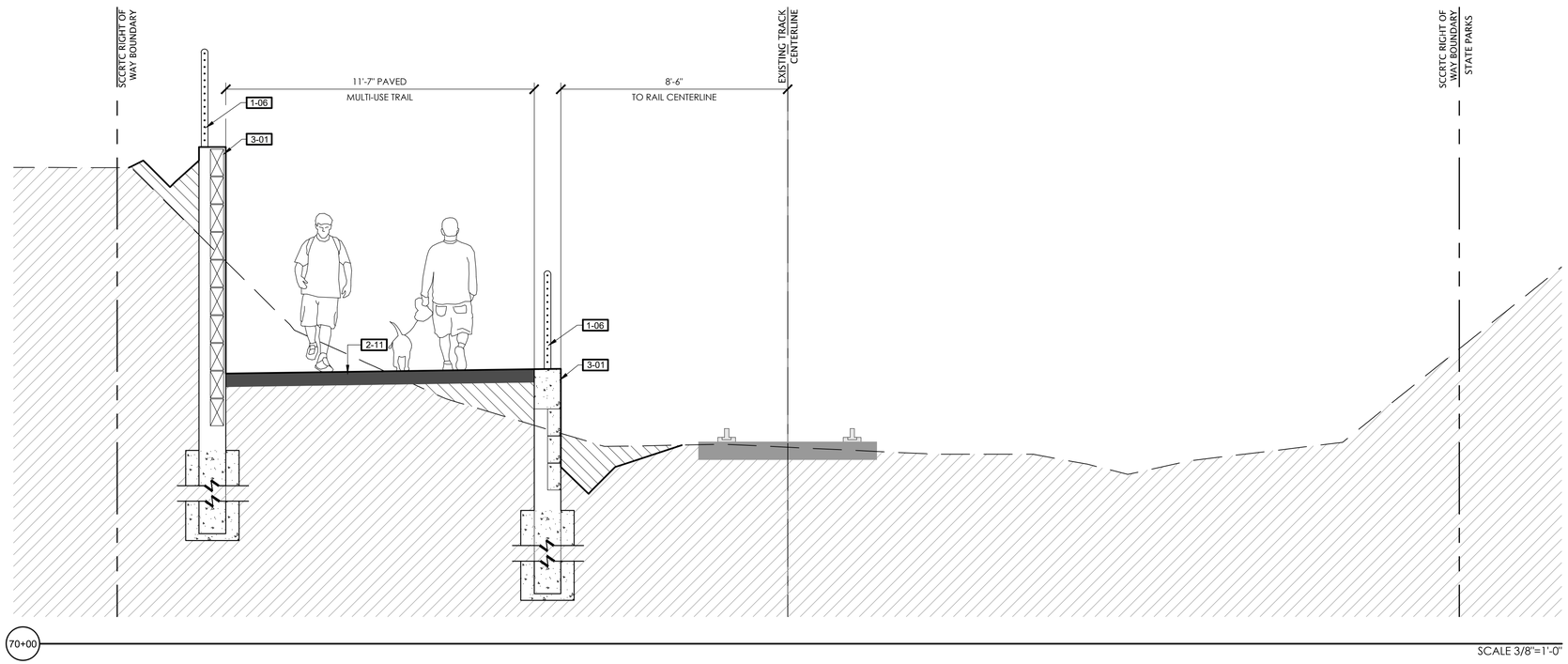
RAIL TRAIL SEGMENTS 8 & 9

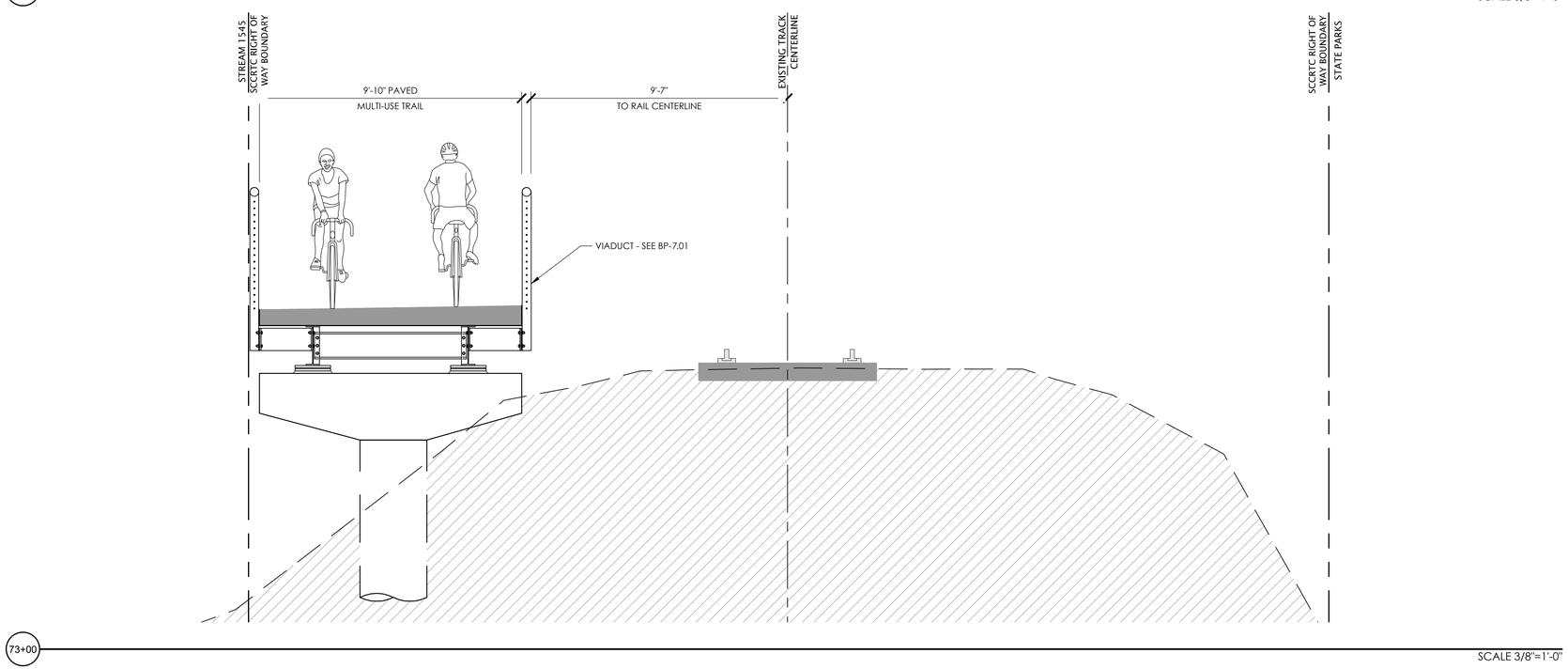
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.09	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





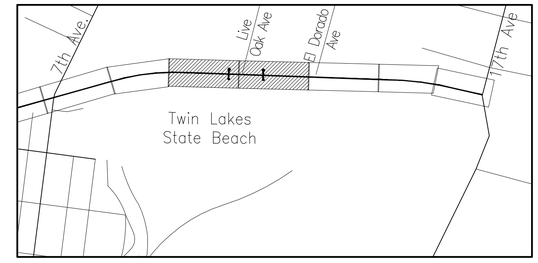
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

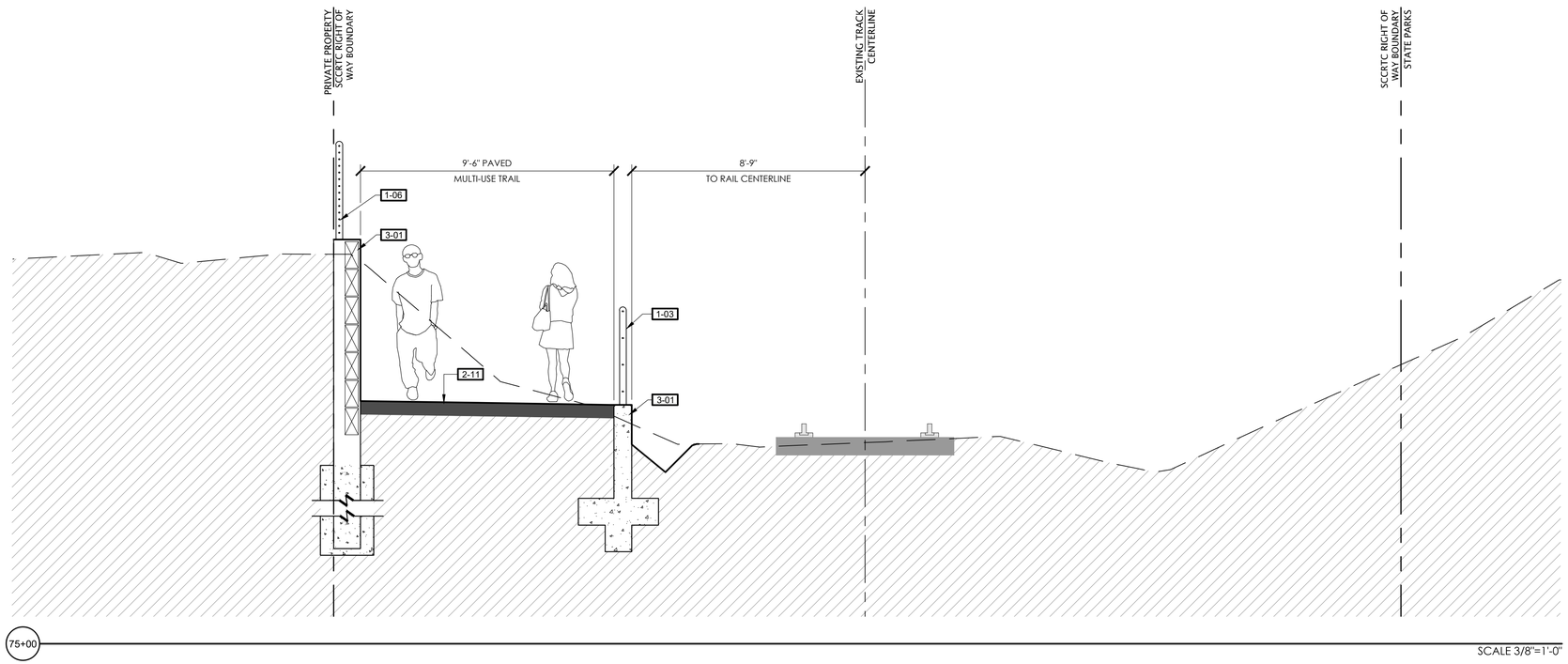
RAIL TRAIL SEGMENTS 8 & 9

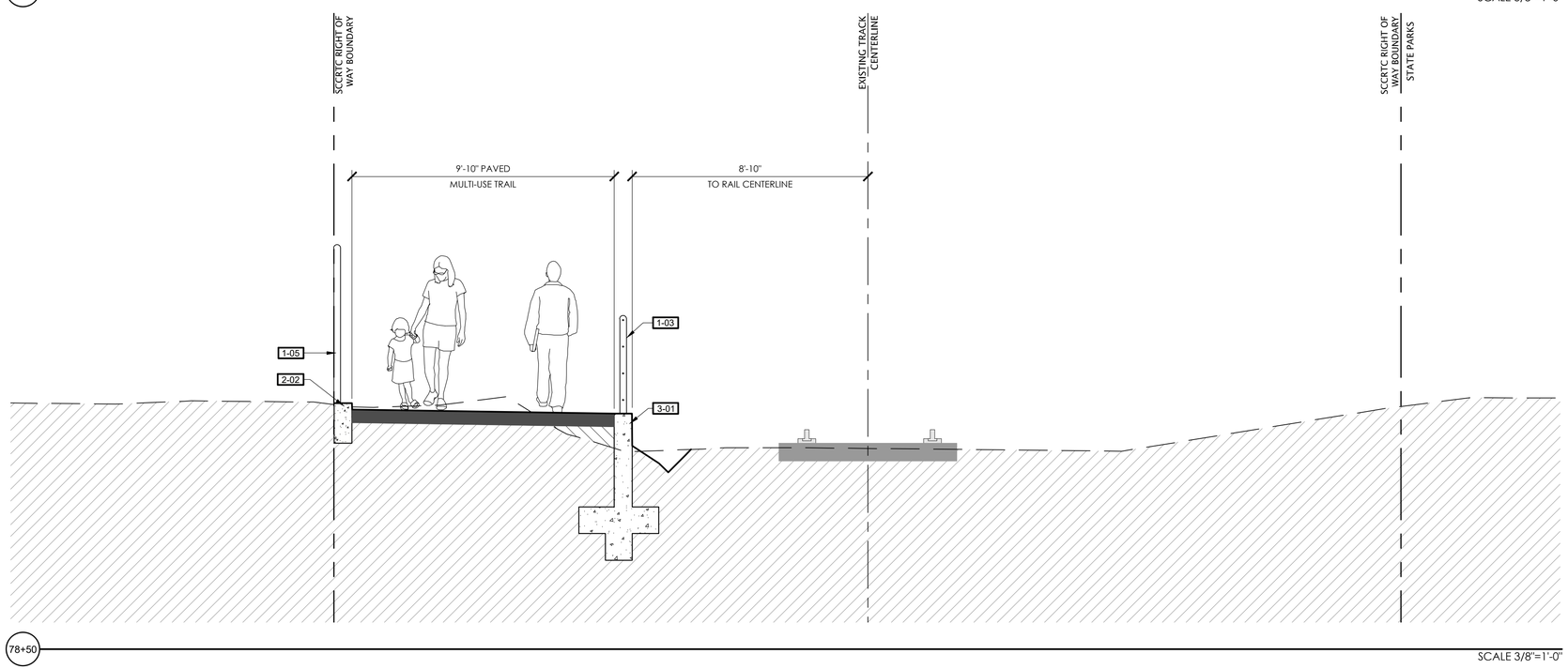
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES	DATE 09/21/22	SCALE AS SHOWN	
FIELD BOOK:	DRAWN KS	CD-3.10	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





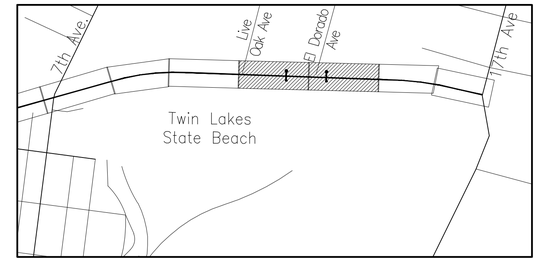
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

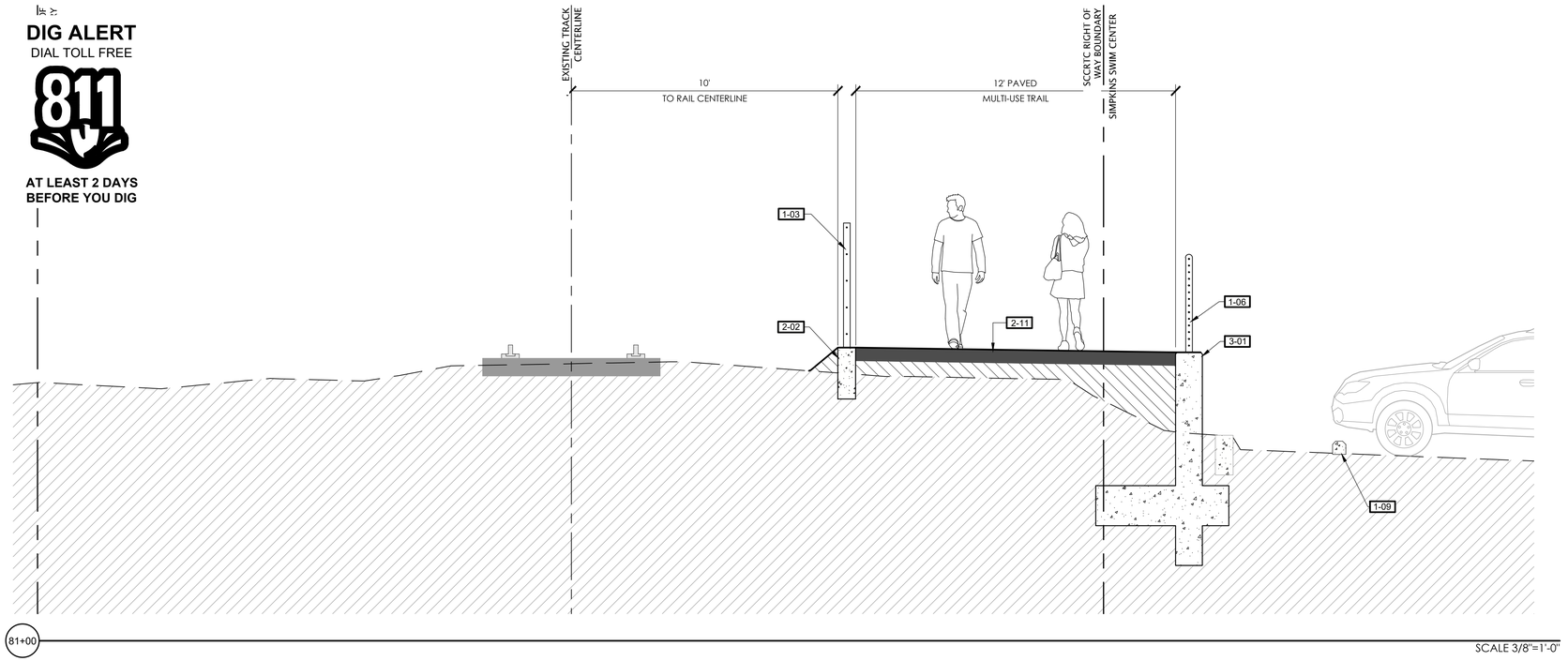
RAIL TRAIL SEGMENTS 8 & 9

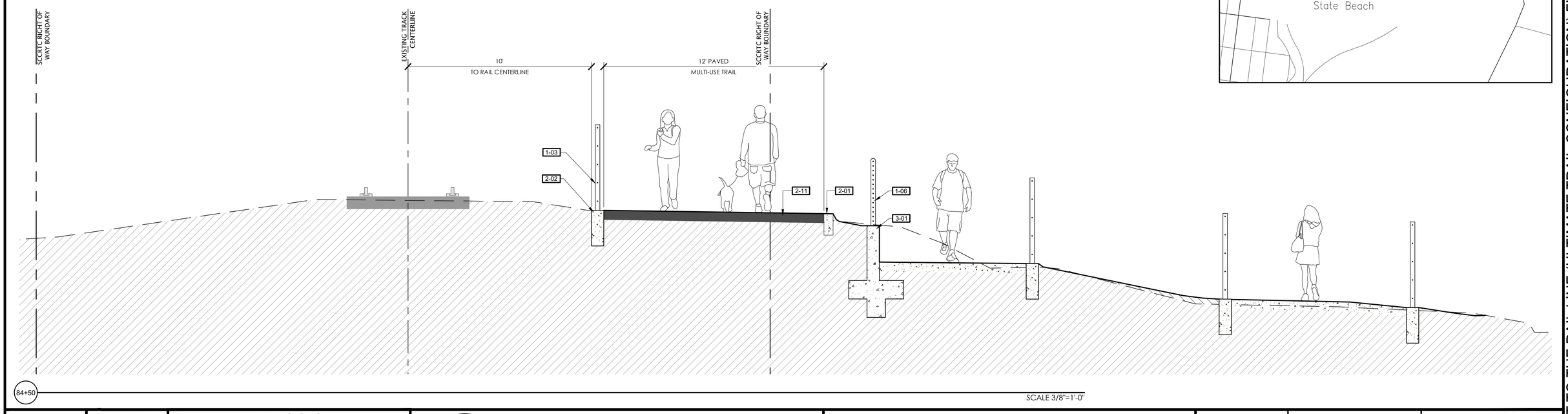
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.11	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





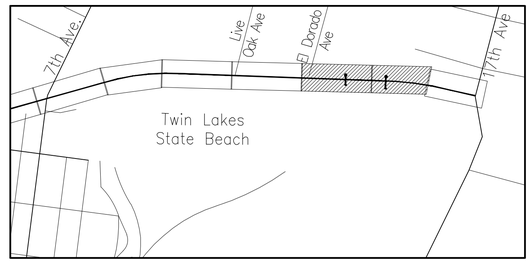
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

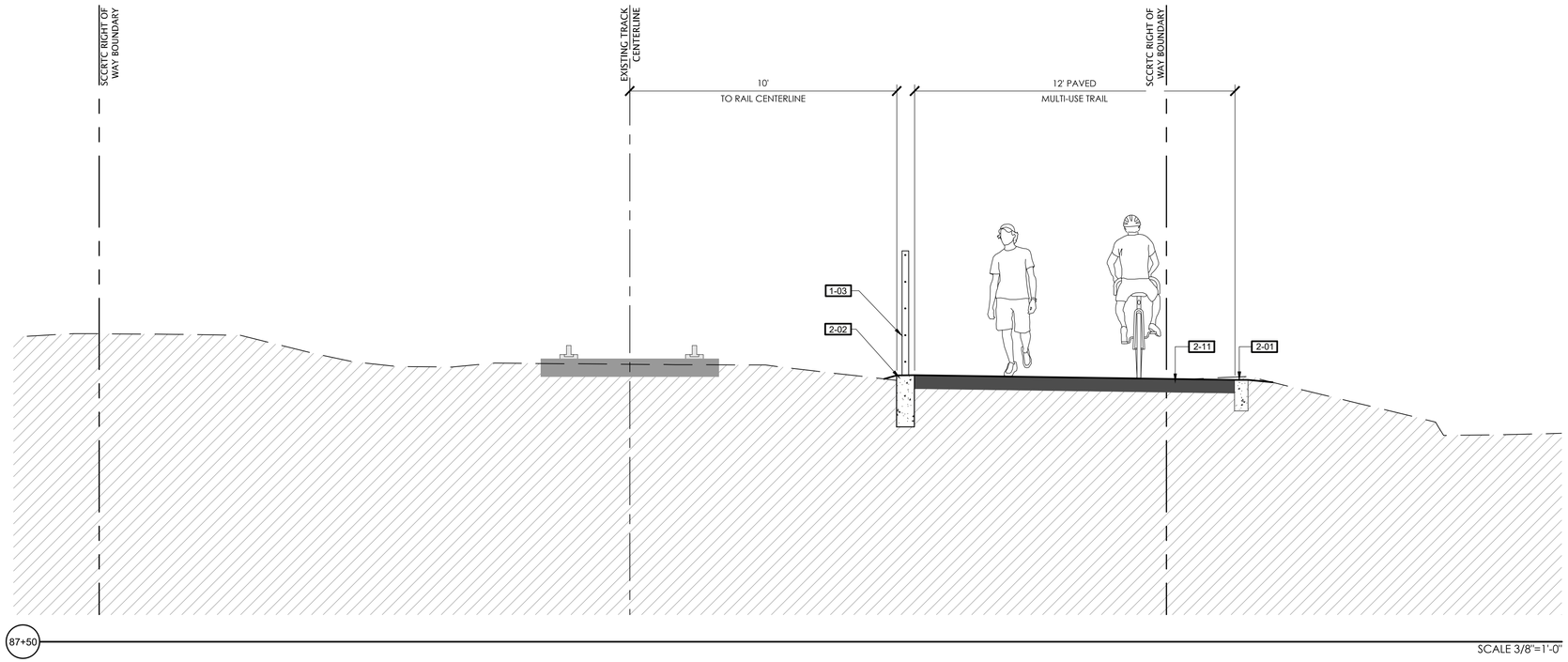
RAIL TRAIL SEGMENTS 8 & 9

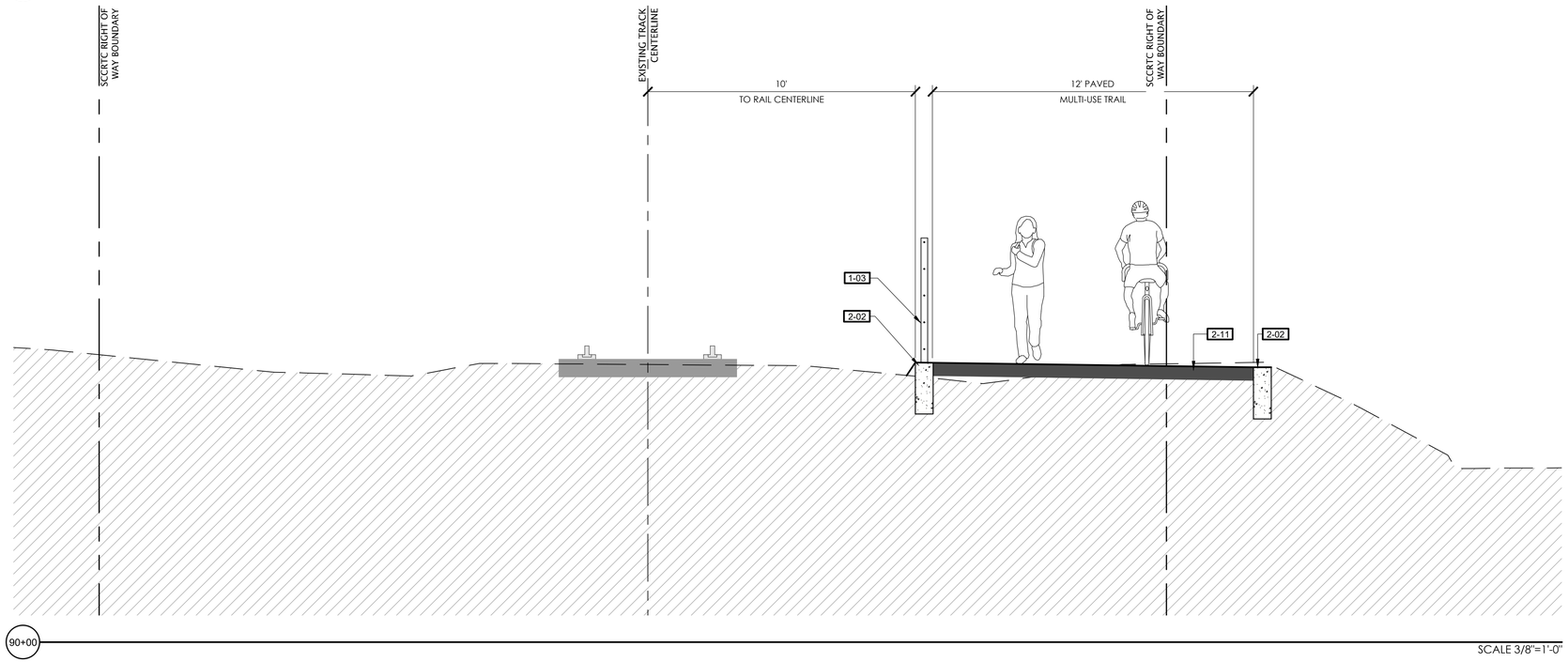
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.12	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG





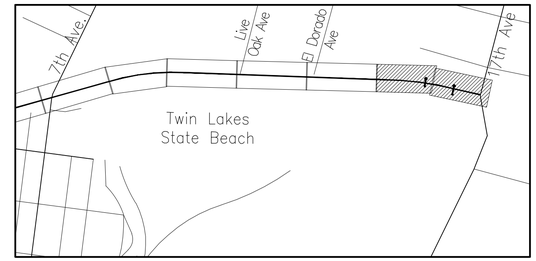
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-03	SEPARATION FENCE
1-05	CHAINLINK FENCE
1-06	GUARDRAIL SYSTEM
1-09	CONCRETE WHEEL STOP
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-09	CONCRETE SIDEWALK
2-11	HMA PAVEMENT (TRAIL)
2-19	6" CURB AND GUTTER
2-45	WOOD PRIVACY FENCE
3-01	RETAINING WALL
4-08	NEW LIGHT FIXTURE ON EXISTING POLE

SYMBOL	EXISTING TO REMAIN DESCRIPTION
EX-01	CURB
EX-02	FENCE

NOTE: REFER TO WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

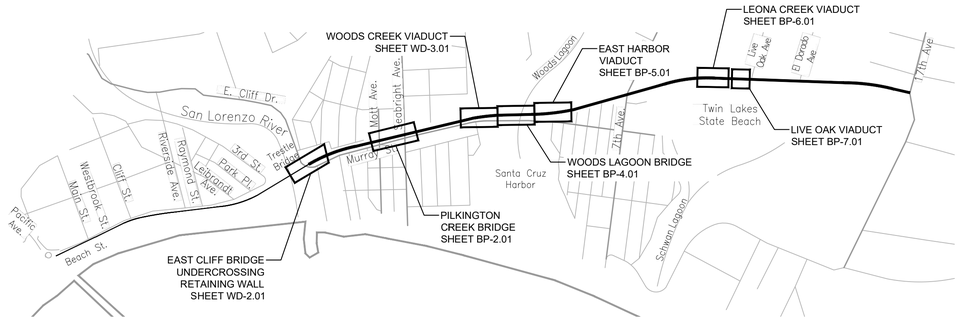
RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE 09/21/22	SCALE AS SHOWN	
	DRAWN KS	CD-3.13	
DRAWING #: SEC-0193-04-RWT-S9	DESIGN KS/MS	VAULT NO.	
	CHECKED MS		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



STRUCTURAL KEY MAP

SCALE: NTS

RETAINING WALL DESIGN NOTES

GROUND ANCHOR WALL SOIL PARAMETERS:
APPARENT EARTH PRESSURE: Ka = 0.36 (LEVEL), 0.48 (2:1) and 0.61 (1.5:1), DENSITY = 120 pcf
Pp = 400 psf/ft acting on 1.5 pier diameters

CANTILEVER WALL SOIL PARAMETERS:
ACTIVE PRESSURE: Pa = 40 psf/ft (LEVEL), 65 psf/ft (2:1) and 65 psf/ft + 15H psf (1.5:1)
Pp = 400 psf/ft acting on 1.5 pier diameters
AT REST PRESSURE: Pr = 55 psf/ft LEVEL, 75 psf/ft 2:1 and 75 psf/ft + 15H psf (1.5:1)
Pp = 400 psf/ft acting on 1.5 pier diameters

SEISMIC LOADING:
GROUND ANCHOR WALL: $37H^2$ lbs. ACTING AT 0.33H
CANTILEVER WALL: $19H^2$ lbs. ACTING AT 0.33H

LIVE LOADING: 240 psf where backslope is LEVEL
No Live Loading elsewhere

BRIDGE AND VIADUCT DESIGN NOTES

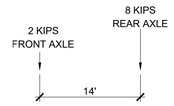
DESIGN CRITERIA (BRIDGE/VIADUCT):
AASHTO LRFD GUIDE SPECIFICATION FOR DESIGN OF PEDESTRIAN BRIDGES, DECEMBER 2009 AND AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION

SEISMIC DESIGN (BRIDGE/VIADUCT):
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION. MINIMUM DESIGN FORCE FOR SUPERSTRUCTURE CONNECTION TO ABUTMENT SHALL BE IN ACCORDANCE WITH SECTION 3.10.9.1

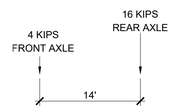
SEISMIC DESIGN (ABUTMENT AND FOUNDATION):
CALTRANS SEISMIC DESIGN CRITERIA VERSION 2.0, APRIL 2019

DEAD LOAD:
VIADUCTS 50 PSF SUPERSTRUCTURE

LIVE LOAD
H-5 TRUCK (BRIDGE WIDTH 7 FEET TO 10 FEET)
H-10 TRUCK (BRIDGE WIDTH GREATER THAN 10 FEET)
90 PSF PEDESTRIAN LOAD (NO REDUCTION ALLOWED)



H5 DESIGN VEHICLE LIVE LOAD DIAGRAM



H10 DESIGN VEHICLE LIVE LOAD DIAGRAM

MATERIAL CRITERIA

FIBER REINFORCED POLYMER (FRP) DECK UNITS

CONCRETE
f'c = 4,000 psi

CONCRETE BACKFILL
f'c = 3,600 psi

GROUND ANCHOR (BAR TENDON)
ASTM A722 GRADE 150

GROUND ANCHOR (STRAND TENDON)
ASTM A416 270 LOW RELAXATION STRAND

STRUCTURAL STEEL SOLDIER PILES
Fy = 50,000 psi

HOLLOW STRUCTURAL STEEL (HSS)
Fy = 46,000 psi

STRUCTURAL STEEL (CHANNELS)
Fy = 50,000 psi

STRUCTURAL STEEL PLATES
Fy = 36,000 psi

STRUCTURAL TIMBER
TREATED DOUGLAS FIR, GRADE No. 1
TIMBER TO BE S4S
FULL HEIGHT FOR WALLS RETAINING 6'-0" AND LESS: TIMBER LAGGING SIZE: 4X12 (3½ x 11¼)
FULL HEIGHT FOR WALLS RETAINING MORE THAN 6'-0": TIMBER LAGGING SIZE: 6X12 (5½ x11½)

GROUND ANCHOR BONDED ZONE:
MINIMUM BONDED ZONE ANCHORAGE LENGTHS ARE BASED ON 8" MINIMUM DIAMETER GROUTED BOND ZONE AND BOND FRICTION OF 1,500 PSF. ULTIMATE TRANSFER LOADS THAT ACTUALLY DEVELOP BETWEEN THE BOND LENGTH AND THE SOIL OR BEDROCK WILL DEPEND ON SEVERAL FACTORS INCLUDING THE EMBEDMENT MATERIALS, THE DIAMETER AND LENGTH OF THE TIEBACK HOLES, THE ROUGHNESS OF THE HOLES, GROUTING TECHNIQUE, GROUT STRENGTH, AND OTHER CONSTRUCTION FACTORS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT TIEBACKS THAT DEVELOP THE REQUIRED STRENGTHS.

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING

2Ø4 Walnut Avenue - Suite B - Santa Cruz, CA - 95060
831.426.3166 www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

COVER SHEET

REFERENCES
FIELD BOOK:
DRAWING #:

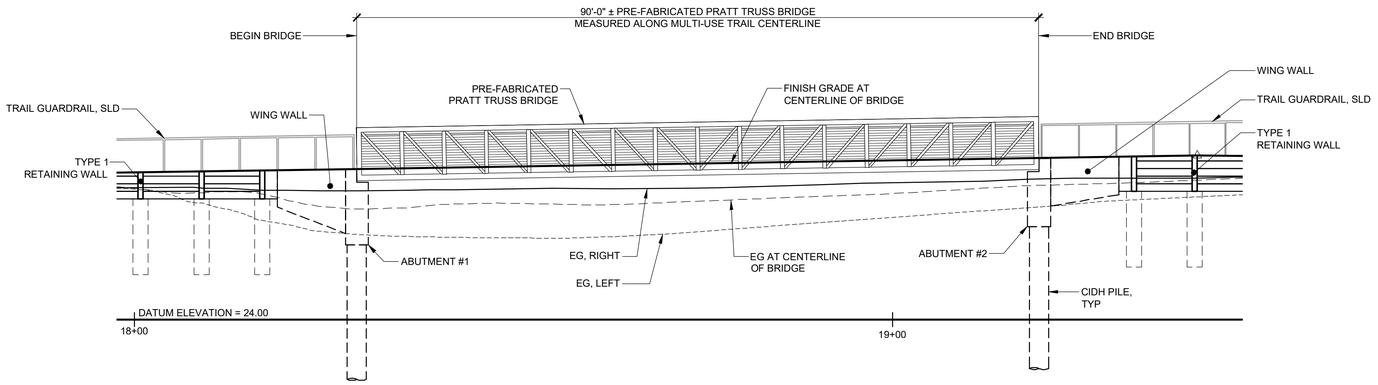
DATE	09/21/2022
DRAWN	EDD
DESIGN	
CHECKED	

SCALE AS SHOWN
BP-1.01
VAULT NO.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: BP-1.01 Xrefs: SC-0193-04-BNF-SB.dwg, xr-TB.dwg, xESNAP-0193-04-RETA_MME.dwg, xs-Bridge Section.dwg
I:\2016\16 RAM - Santa Cruz Rail Trail Segments 8 and 9\Data\001 BP 101 General Notes Design Criteria.dwg, Plotted By: eddyer, Plotted: Sep 21, 2022 - 1:53pm

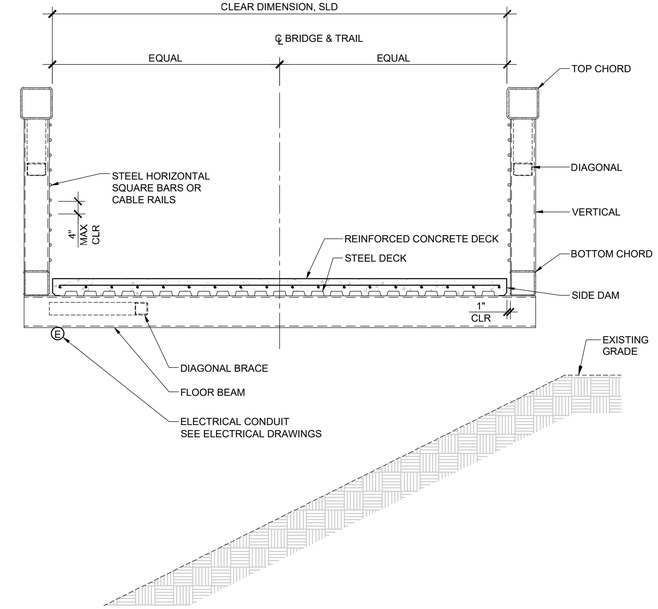
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



BRIDGE ELEVATION

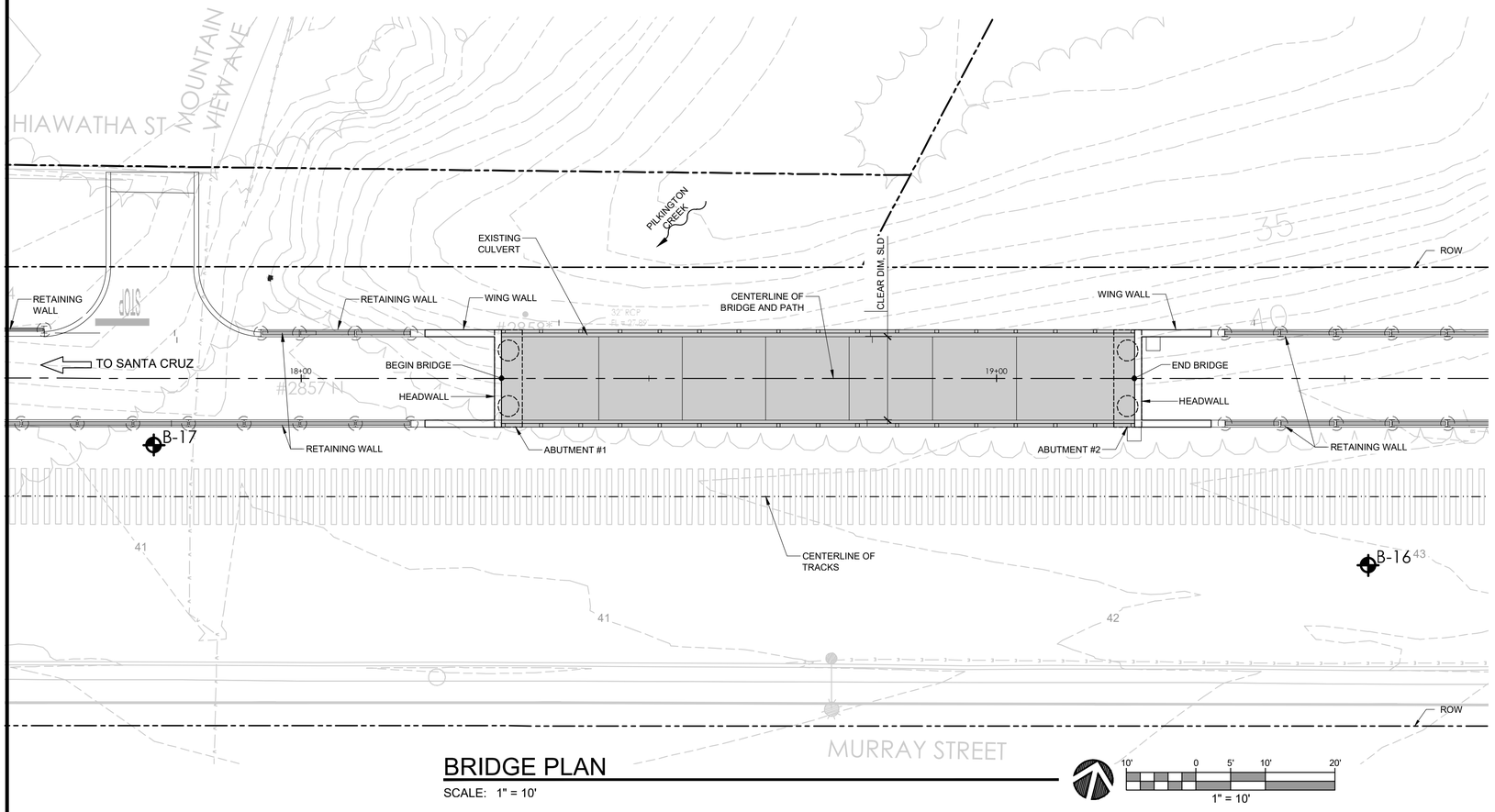
SCALE: 1" = 10'

10' 0 5' 10' 20'
1" = 10'



BRIDGE SECTION

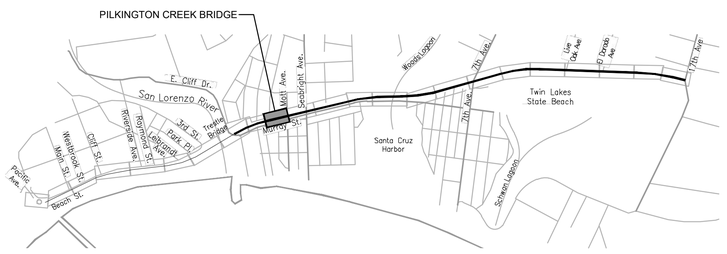
SCALE: 1/2" = 1'-0"



BRIDGE PLAN

SCALE: 1" = 10'

10' 0 5' 10' 20'
1" = 10'



STRUCTURAL KEY MAP

SCALE: NTS

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
2141 Walnut Avenue - Suite B - Santa Cruz, CA 95060
831.426.3186 www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

PILKINGTON CREEK BRIDGE GENERAL PLAN SHEET

REFERENCES			
FIELD BOOK:	DATE	09/21/2022	SCALE AS SHOWN
	DRAWN	PD/EDD	BP-2.01
DRAWING #:	DESIGN		VAULT NO.
	CHECKED		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: BP-2.01 Xrefs: SC-0193-04-RMT-BR.dwg, SC-0193-04-RMT-TP.dwg, SEC-0193-04-RMT-ED.dwg, pr-Title.dwg, xSNAP-0193-04-RC16_MME.dwg, RPSP Boring Locations.dwg, pr-Site Segment 8.dwg, XT-0193-04-RMT-SP.dwg, pr-Civic Section.dwg, pr-Title.dwg, xSNAP-0193-04-RC16_MME.dwg, RPSP Boring Locations.dwg, pr-Site Segment 8.dwg, XT-0193-04-RMT-SP.dwg, SEC-0193-04-RMT-ED

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

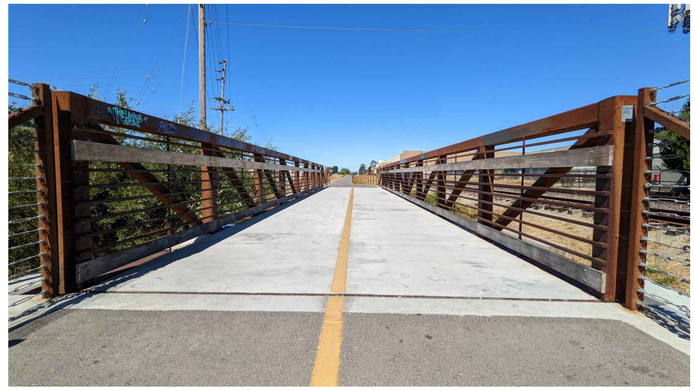
#1 - Painted pratt truss bridge with composite deck, vertical pickets, rub rail and toe kick

#2 - Painted pratt truss bridge with wood deck, vertical wood pickets, rub rail and toe kick

#3 - Painted pratt truss bridge with wood deck, vertical wood pickets, rub rail and toe kick

#4 - Weathering steel pratt truss bridge with concrete deck, horizontal round bar railings, grab rail and toe kick

#5 - Weathering steel pratt truss bridge with concrete deck, horizontal steel angle railing and toe kick



#6 - Weathering steel pratt truss bridge with concrete deck, horizontal steel square bar railing, wood rub rail and toe kick (Arroyo Seco, Rail Trail Segment 7)

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
224 Walnut Avenue - Suite B - Santa Cruz, CA - 95060
831.426.3186 www.mme.com

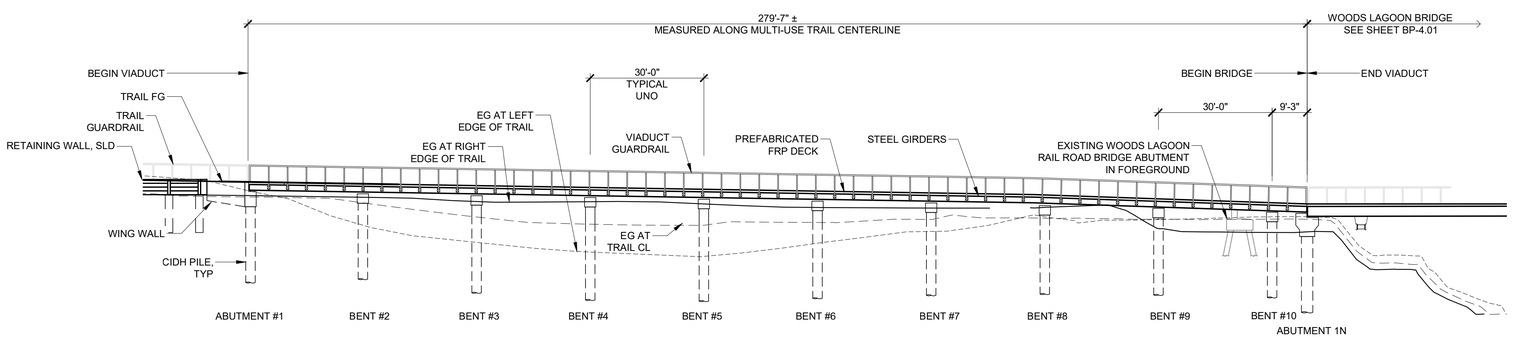
REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)
BRIDGE CONFIGURATION AND RAILING OPTIONS

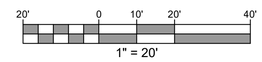
REFERENCES			
FIELD BOOK:	DATE	09/21/2022	SCALE AS SHOWN
	DRAWN	EDD/PD	BP-2.02
DRAWING #:	DESIGN		VAULT NO.
	CHECKED		

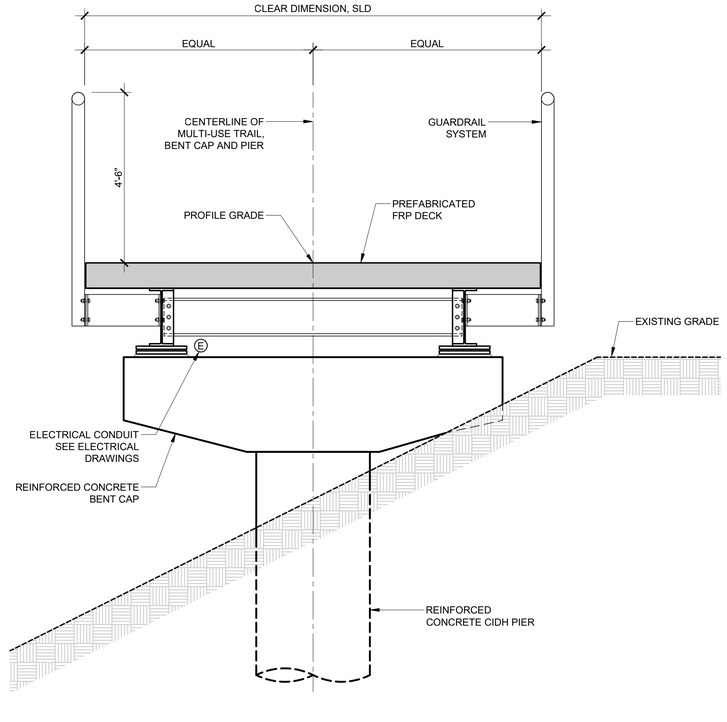
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022



VIADUCT ELEVATION

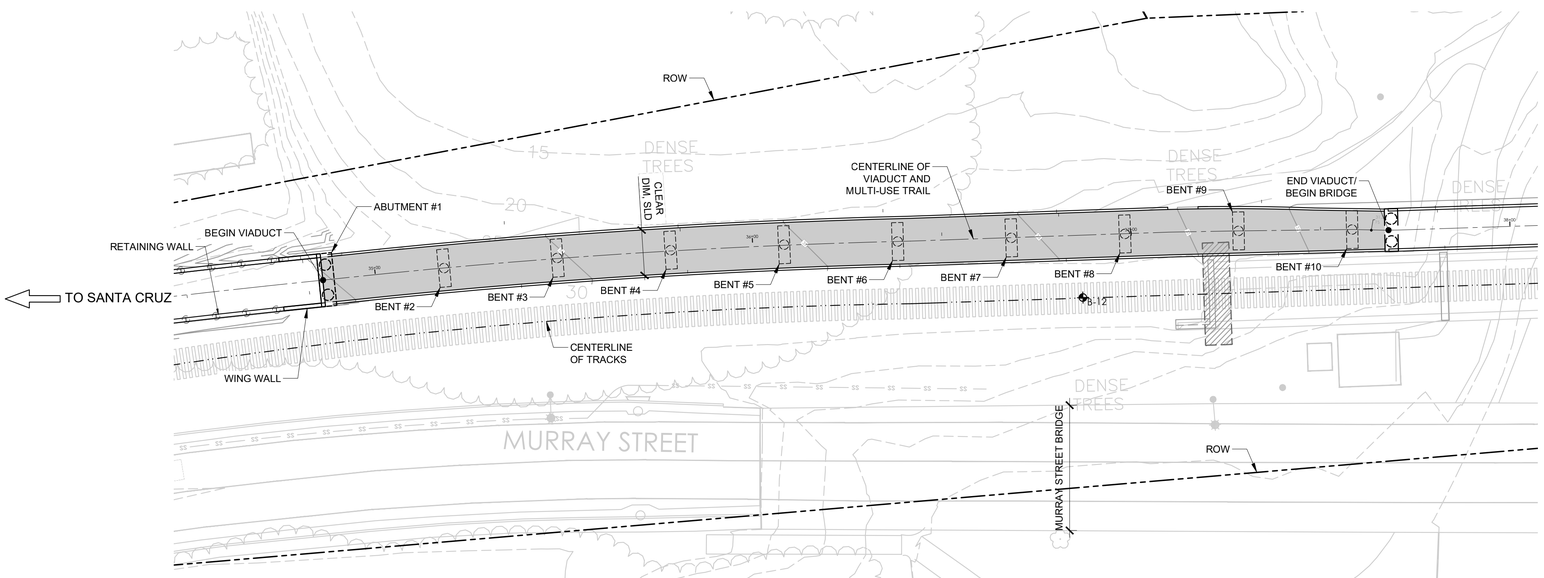
SCALE: 1" = 20'





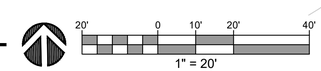
VIADUCT SECTION

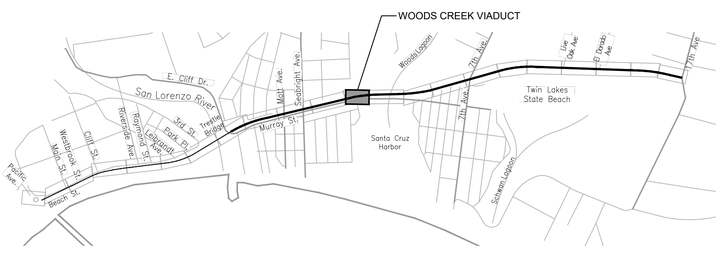
SCALE: 1/2" = 1'-0"



VIADUCT PLAN

SCALE: 1" = 20'





STRUCTURAL KEY MAP

SCALE: NTS

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

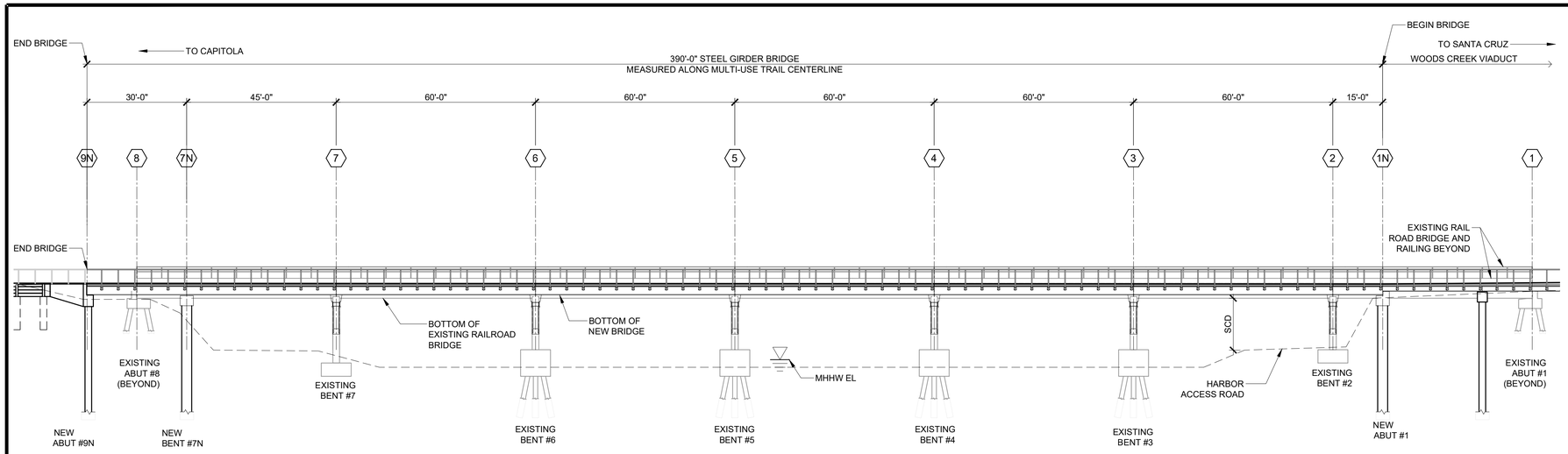
RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

WOODS CREEK VIADUCT GENERAL PLAN SHEET

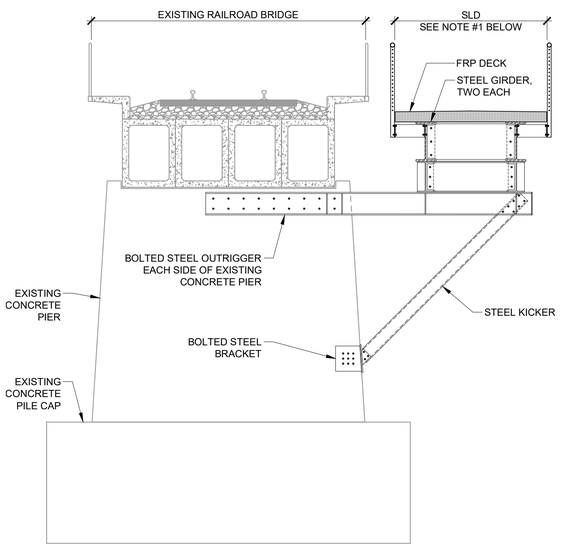
REFERENCES	DATE 09/21/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN EDD	BP-3.01
DRAWING #:	DESIGN	VAULT NO.
	CHECKED	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022



NORTH BRIDGE ELEVATION

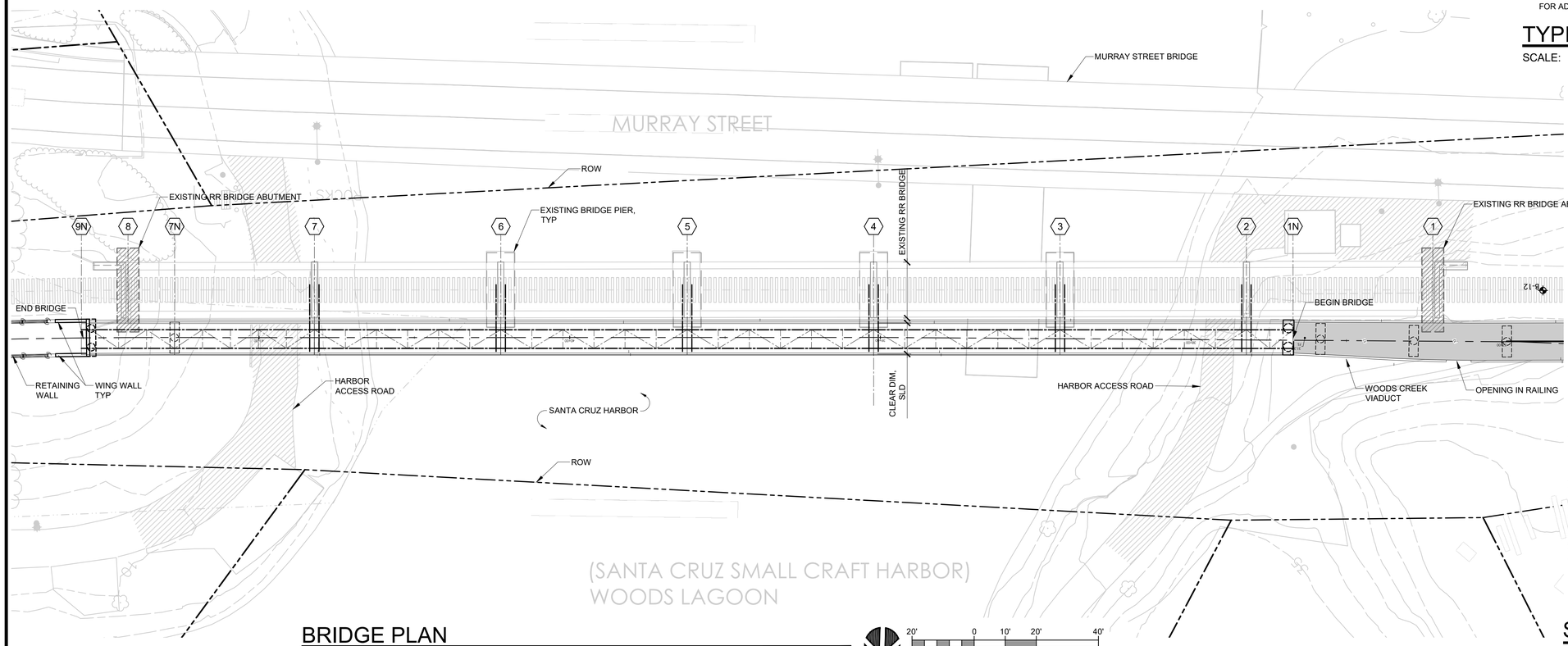
SCALE: 1" = 20'



NOTE #1: A 10' TRAIL WIDTH WAS CHOSEN BASED ON THE RECOMMENDED MAXIMUM WIDTH BY TRC FEASIBILITY STUDY DATED JAN. 7TH, 2019, TITLED "FEASIBILITY STUDY FOR ADDING PEDESTRIAN BICYCLE FACILITIES TO UPPER HARBOR RAILROAD BRIDGE.

TYPICAL SECTION

SCALE: 1" = 5'

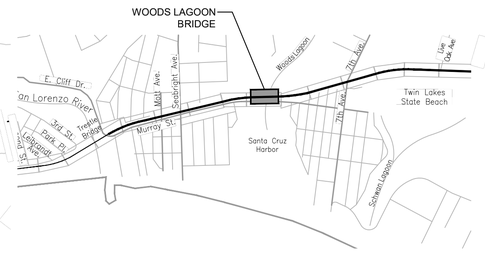


BRIDGE PLAN

SCALE: 1" = 20'

20' 0 10' 20' 40'

1" = 20'



STRUCTURAL KEY MAP

SCALE: NTS

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

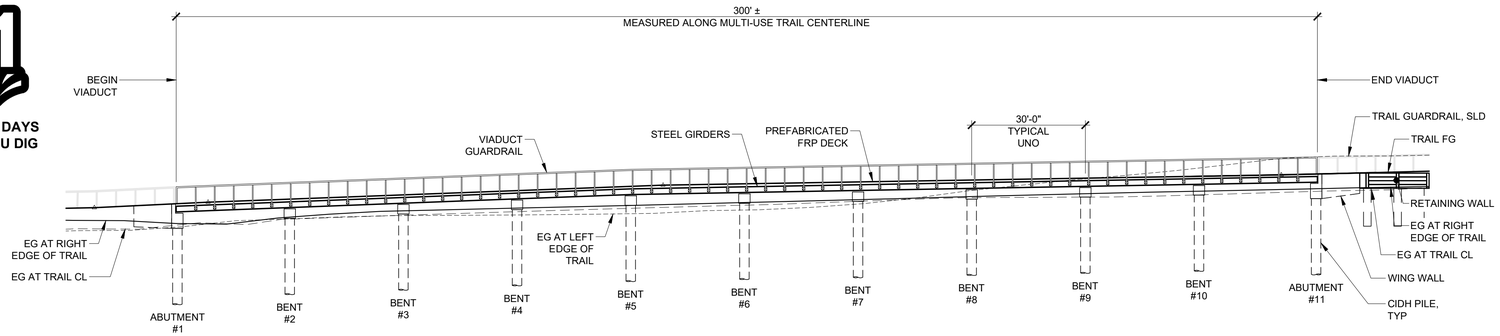
RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

WOODS LAGOON BRIDGE

REFERENCES			
FIELD BOOK:	DATE 09/21/2022	SCALE AS SHOWN	
	DRAWN GR	BP-4.01	
DRAWING #:	DESIGN	VAULT NO.	
	CHECKED		

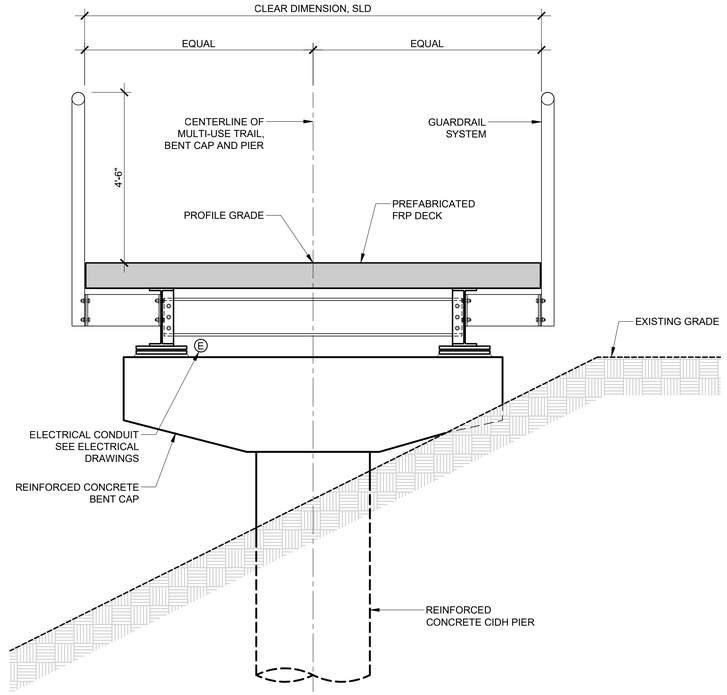
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



VIADUCT ELEVATION

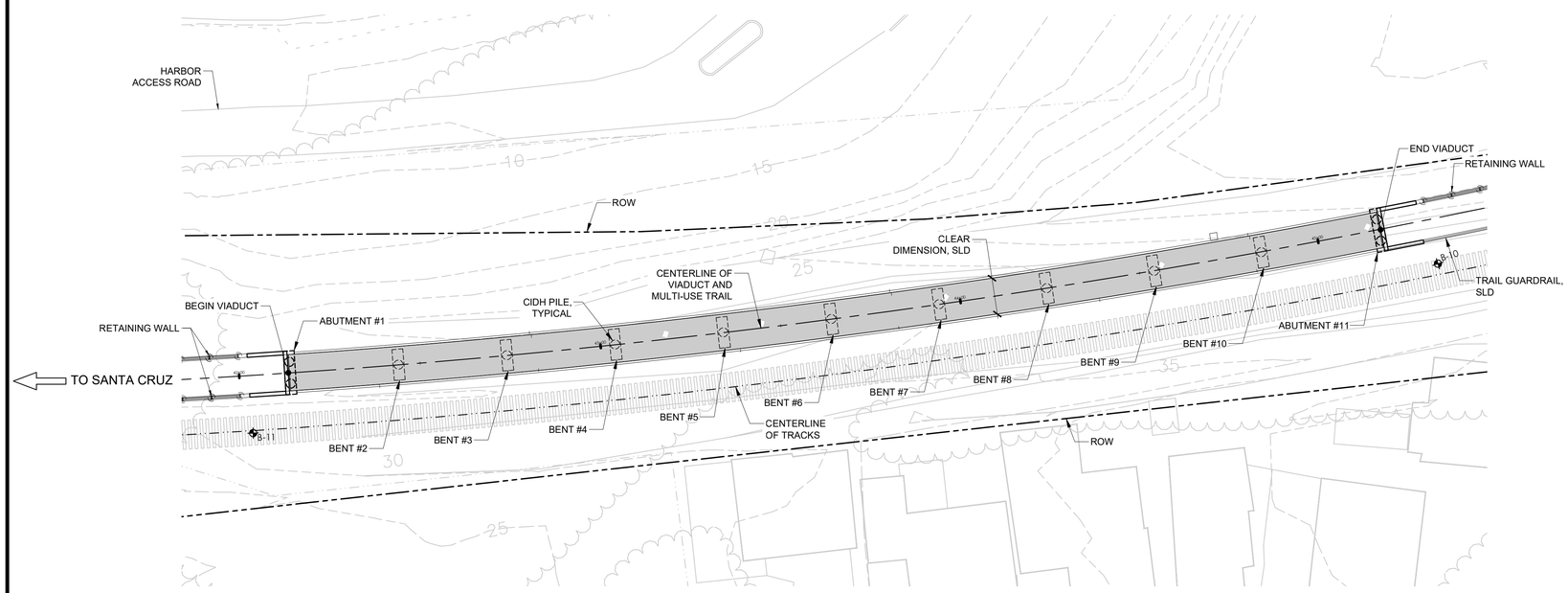
SCALE: 1" = 20'

20' 0 10' 20' 40'
1" = 20'



VIADUCT SECTION

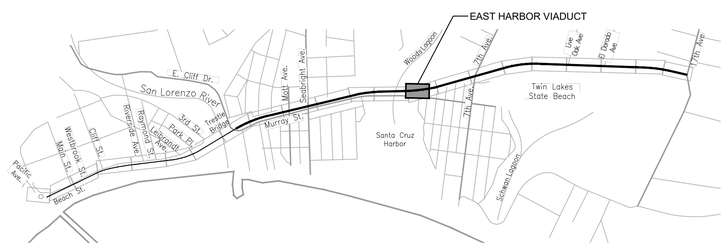
SCALE: 1/2" = 1'-0"



VIADUCT PLAN

SCALE: 1" = 20'

20' 0 10' 20' 40'
1" = 20'



STRUCTURAL KEY MAP

SCALE: NTS

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

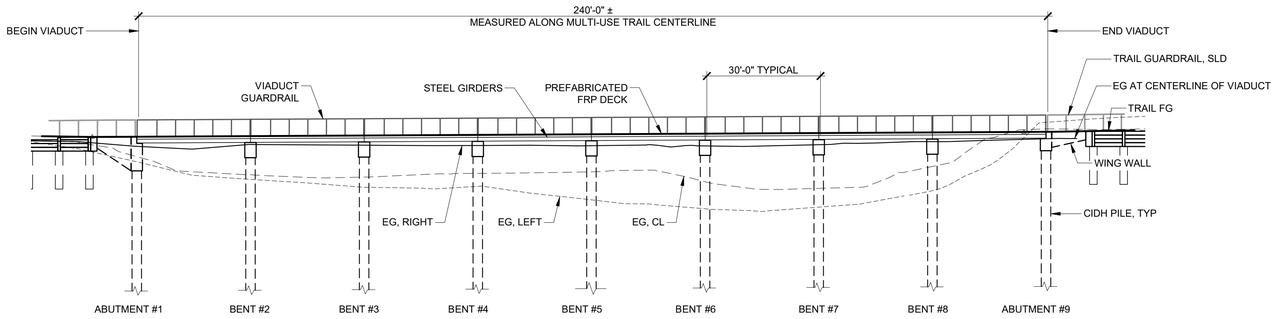
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

EAST HARBOR VIADUCT GENERAL PLAN SHEET

REFERENCES			
FIELD BOOK:	DATE 09/21/2022	SCALE AS SHOWN	
	DRAWN EDD	BP-5.01	
DRAWING #:	DESIGN	VAULT NO.	
	CHECKED		

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

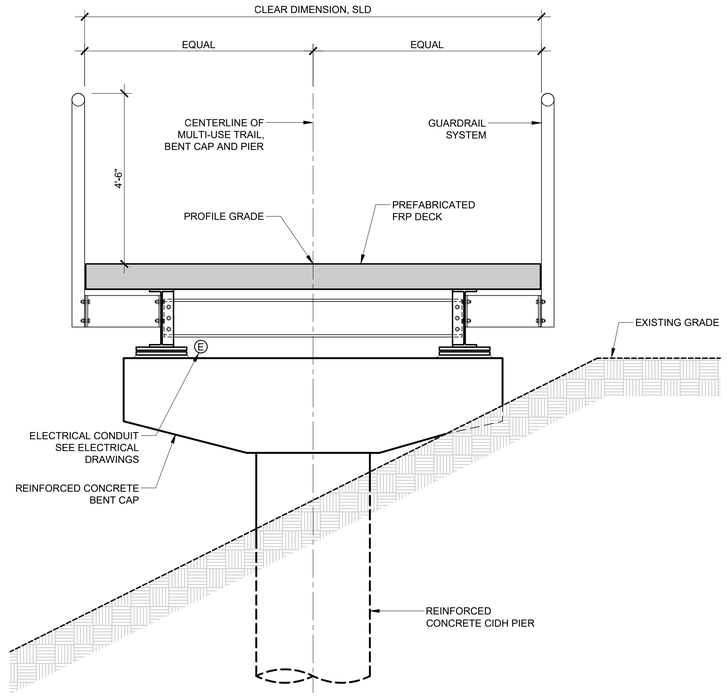
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



VIADUCT ELEVATION

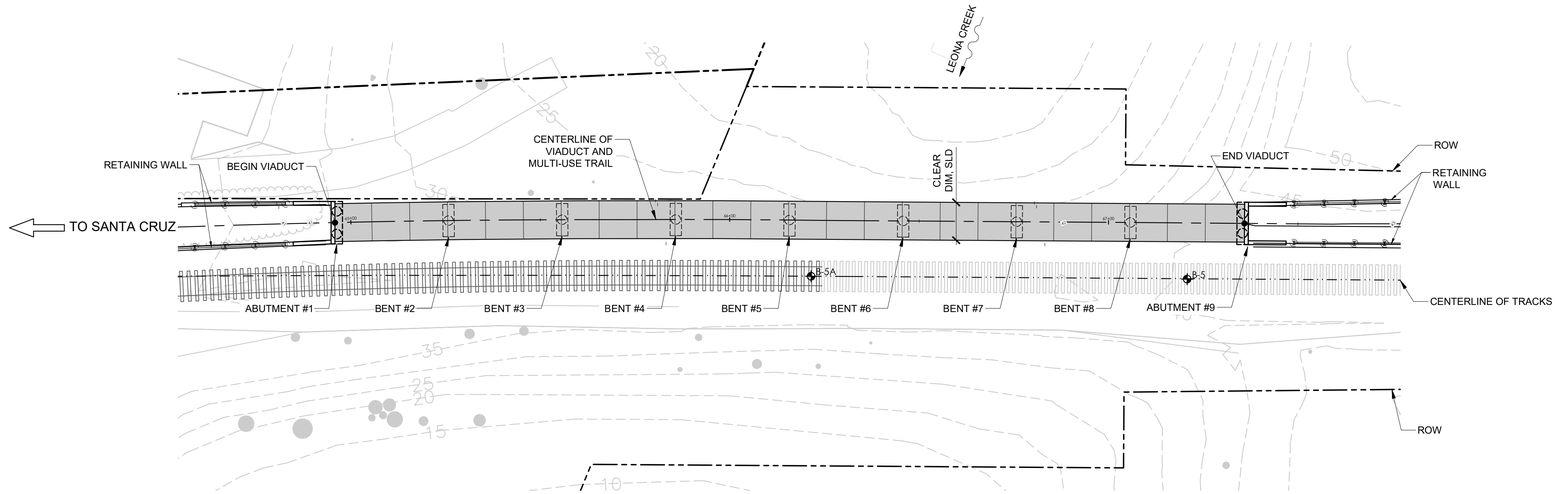
SCALE: 1" = 20'

20' 0 10' 20' 40'
1" = 20'



VIADUCT SECTION

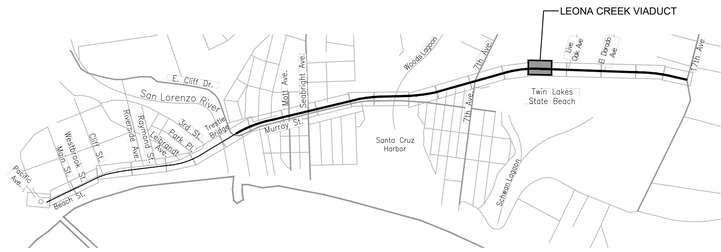
SCALE: 1/2" = 1'-0"



VIADUCT PLAN

SCALE: 1" = 20'

20' 0 10' 20' 40'
1" = 20'



STRUCTURAL KEY MAP

SCALE: NTS

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

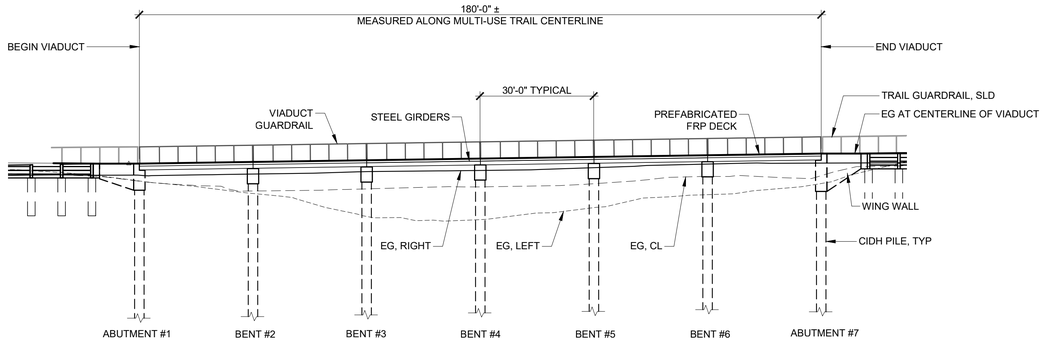
RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

LEONA CREEK VIADUCT GENERAL PLAN SHEET

REFERENCES			
FIELD BOOK:	DATE	09/21/2022	SCALE AS SHOWN
	DRAWN	GR	BP-6.01
DRAWING #:	DESIGN		VAULT NO.
	CHECKED		

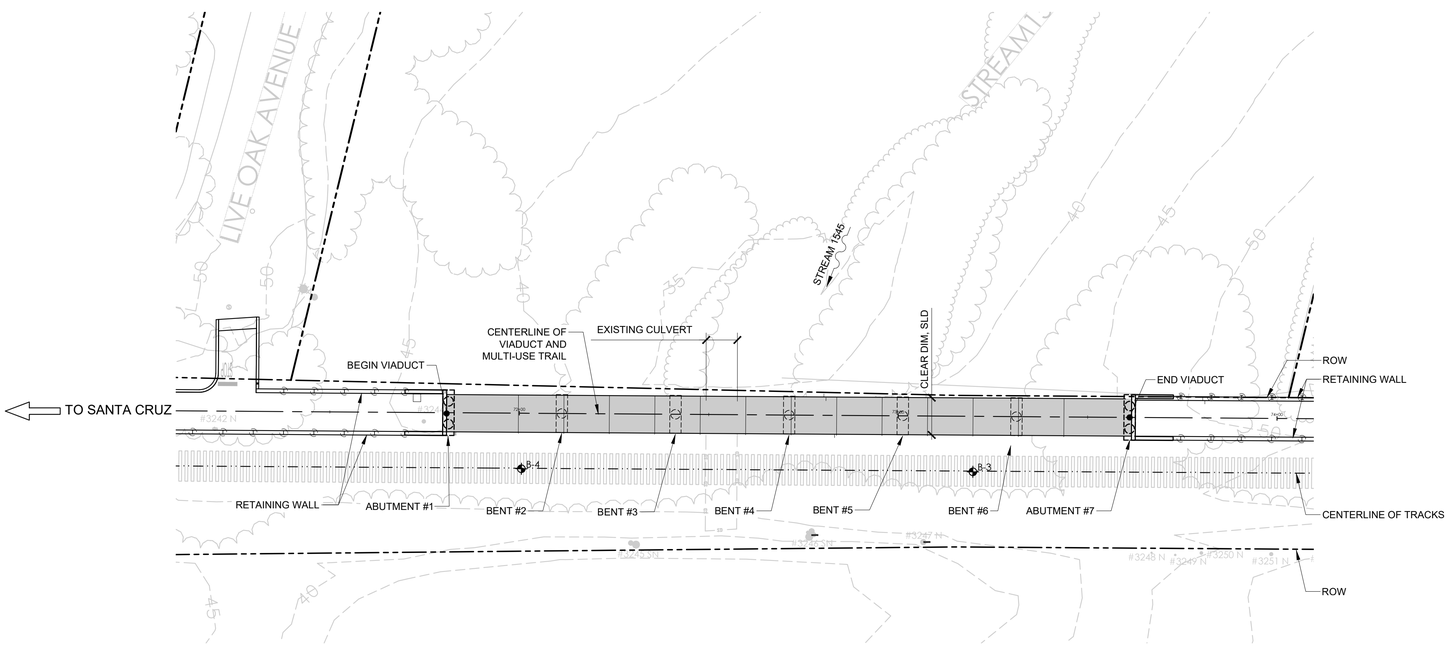
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



VIADUCT ELEVATION

SCALE: 1" = 20'

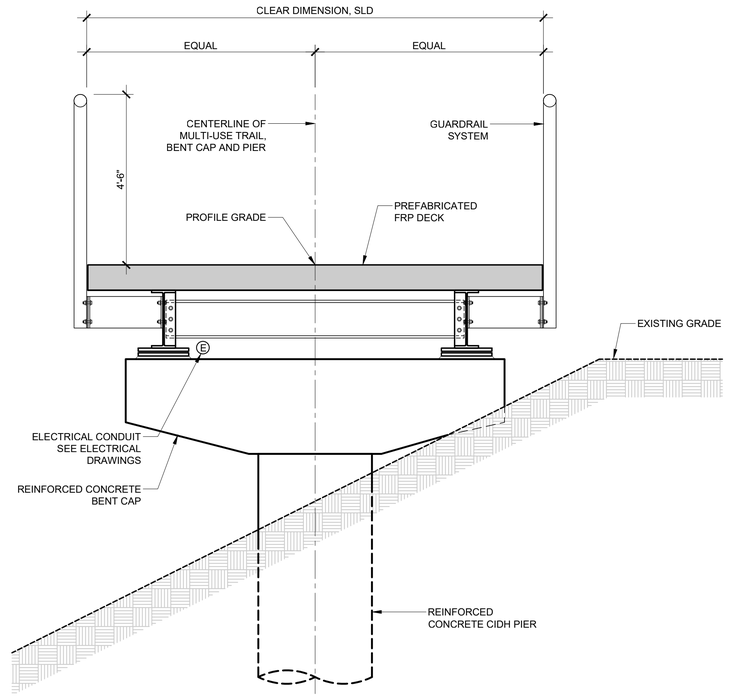
20' 0 10' 20' 40'
1" = 20'



VIADUCT PLAN

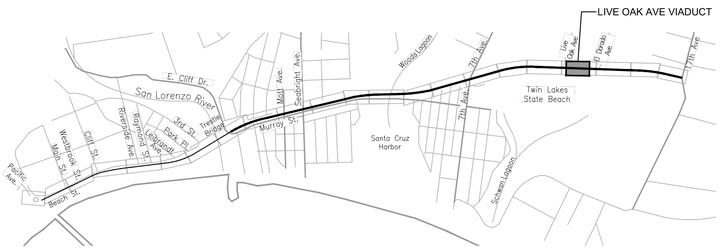
SCALE: 1" = 20'

20' 0 10' 20' 40'
1" = 20'



VIADUCT SECTION

SCALE: 1/2" = 1'-0"



STRUCTURAL KEY MAP

SCALE: NTS

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

LIVE OAK VIADUCT GENERAL PLAN SHEET

REFERENCES			
FIELD BOOK:	DATE 09/21/2022	SCALE AS SHOWN	
	DRAWN GR	BP-7.01	
DRAWING #:	DESIGN	VAULT NO.	
	CHECKED		

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

TYPE 1 WALL (SOLDIER PILE RETAINING WALLS) (1/WD102) (2/WD102)

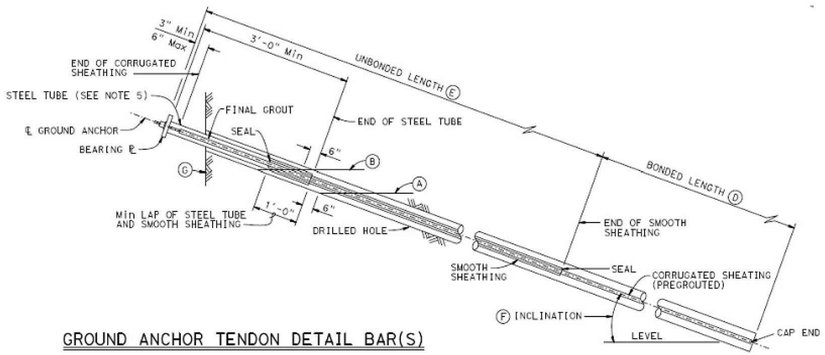
SCHEDULE 'A'						
BACKSLOPE	TRAFFIC SURCHARGE	MAX RETAINED HEIGHT	SOLDIER PILE SPACING	SOLDIER PILE SIZE	PIER DIAMETER	PIER DEPTH
LEVEL	NO	4'- 0"	8'- 2"	W10X33	24 "	10'- 0"
LEVEL	NO	6'- 0"	8'- 2"	W10X33	24 "	12'- 0"
LEVEL	NO	8'- 0"	8'- 2"	W14X53	24 "	15'- 0"
LEVEL	NO	10'- 0"	8'- 2"	W14X68	24 "	18'- 0"
LEVEL	NO	10'- 0"	8'- 2"	W14X68	30 "	18'- 0"
LEVEL	NO	12'- 0"	8'- 2"	W18X86	30 "	20'- 0"

SCHEDULE 'B'						
BACKSLOPE	TRAFFIC SURCHARGE	MAX RETAINED HEIGHT	SOLDIER PILE SPACING	SOLDIER PILE SIZE	PIER DIAMETER	PIER DEPTH
LEVEL	YES	4'- 0"	8'- 2"	W10X33	24 "	12'- 0"
LEVEL	YES	6'- 0"	8'- 2"	W10X33	24 "	15'- 0"
LEVEL	YES	8'- 0"	8'- 2"	W14X53	24 "	18'- 0"
LEVEL	YES	10'- 0"	8'- 2"	W14X68	24 "	21'- 0"
LEVEL	YES	10'- 0"	8'- 2"	W14X68	30 "	19'- 0"
LEVEL	YES	12'- 0"	8'- 2"	W18X86	30 "	22'- 0"

SCHEDULE 'C'						
BACKSLOPE	TRAFFIC SURCHARGE	MAX RETAINED HEIGHT	SOLDIER PILE SPACING	SOLDIER PILE SIZE	PIER DIAMETER	PIER DEPTH
2:1	NO	4'- 0"	8'- 2"	W10X33	24 "	12'- 0"
2:1	NO	6'- 0"	8'- 2"	W12X40	24 "	16'- 0"
2:1	NO	8'- 0"	8'- 2"	W14X61	24 "	20'- 0"
2:1	NO	9'- 0"	8'- 2"	W14X74	24 "	22'- 0"
2:1	NO	10'- 0"	8'- 2"	W18X71	30 "	22'- 0"

TYPE 2 WALL (SOLDIER PILE WITH GROUND ANCHOR RETAINING WALLS) (3/WD102)

SCHEDULE 'E'									
BACKSLOPE	MAXIMUM RETAINED HEIGHT (H)	TIEBACK HEIGHT	SOLDIER PILE SIZE	PIER DIAMETER	PIER DEPTH	TENDON DIAMETER	MIN UNBONDED LENGTH	MIN BONDED LENGTH	TIEBACK REACTION
1.5:1	10'-0"	10'-0"	W12x45	2'-0"	8'-0"	1"	10'-0"	30'-0"	60 k
1.5:1	12'-0"	10'-0"	W12x45	2'-0"	8'-0"	1.25"	10'-0"	40'-0"	90 k
1.5:1	14'-0"	10'-0"	W14x61	2'-0"	8'-0"	1.38"	10'-0"	60'-0"	120 k



GROUND ANCHOR TENDON DETAIL BAR(S)

NOTES:
- (A) Level of initial grouting for drilled hole 6" in diameter or smaller
- (B) Level of secondary grouting
- (C) Level of initial grouting inside corrugated sheathing
- (D) Bonded length shall be determined by the contractor
- (E) For unbonded length, see SCHEDULES
- (F) For inclination, see SCHEDULES
- (G) Face of Wall Excavation

NOTES:
1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
3. Silicone sealant to cover full width of flange.
4. Steel tube (Min thickness = ¼") welded to bearing plate. Galvanize assembly after fabrication
5. Steel tube welded to bearing plate, inside diameter of steel tube (Min thickness = ¼") to be 1" greater than outside diameter of smooth sheathing.
6. Galvanize assembly after fabricafion.
7. For other wall details, see PROJECT PLANS.

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab Name: WD-1.01 Xrefs: --- File Name: I:\V1\960 RRM - Santa Cruz Rail Trail\Segments 8 and 9\dwg\003 WD 101 Retaining Wall Schedules.dwg, Plotted By: eagan, Plotted: Sep 21, 2022 - 1:55pm

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL • STRUCTURAL ENGINEERING
2144 Walnut Avenue - Suite B - Santa Cruz, CA 95060
831.426.3166 www.mme.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)

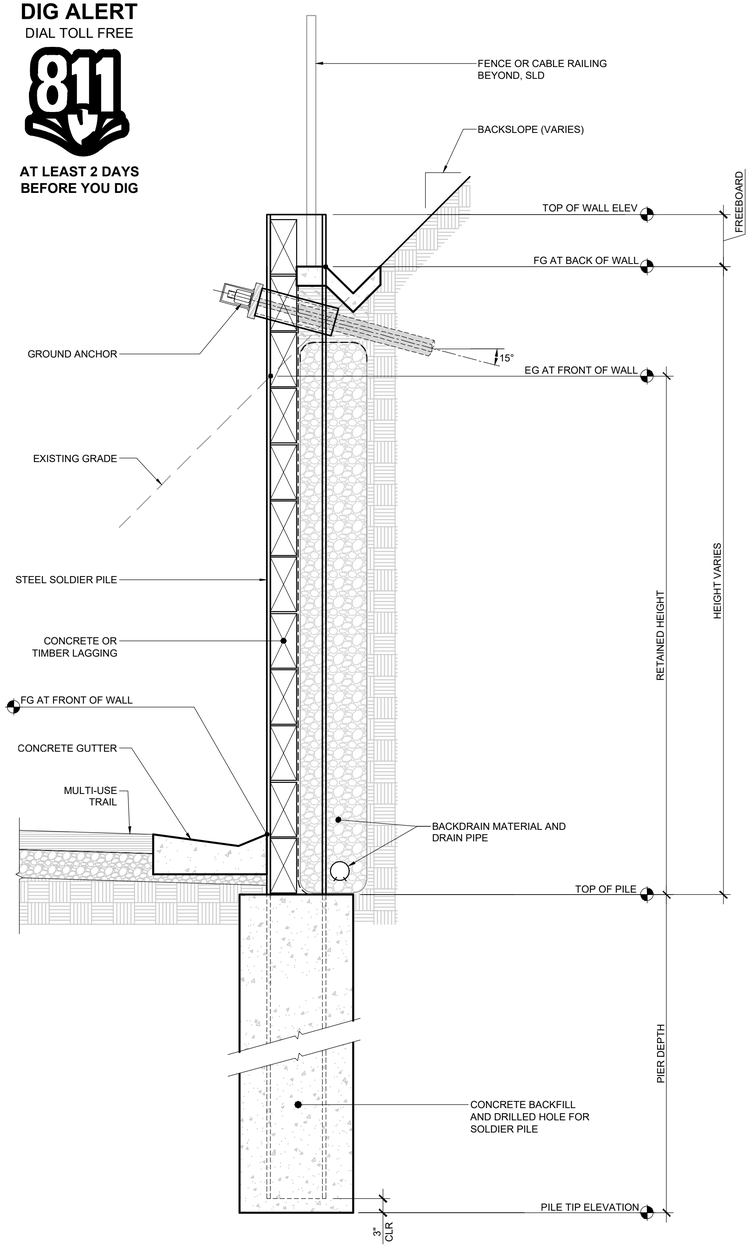
RETAINING DETAIL SHEET

REFERENCES
FIELD BOOK:
DRAWING #:

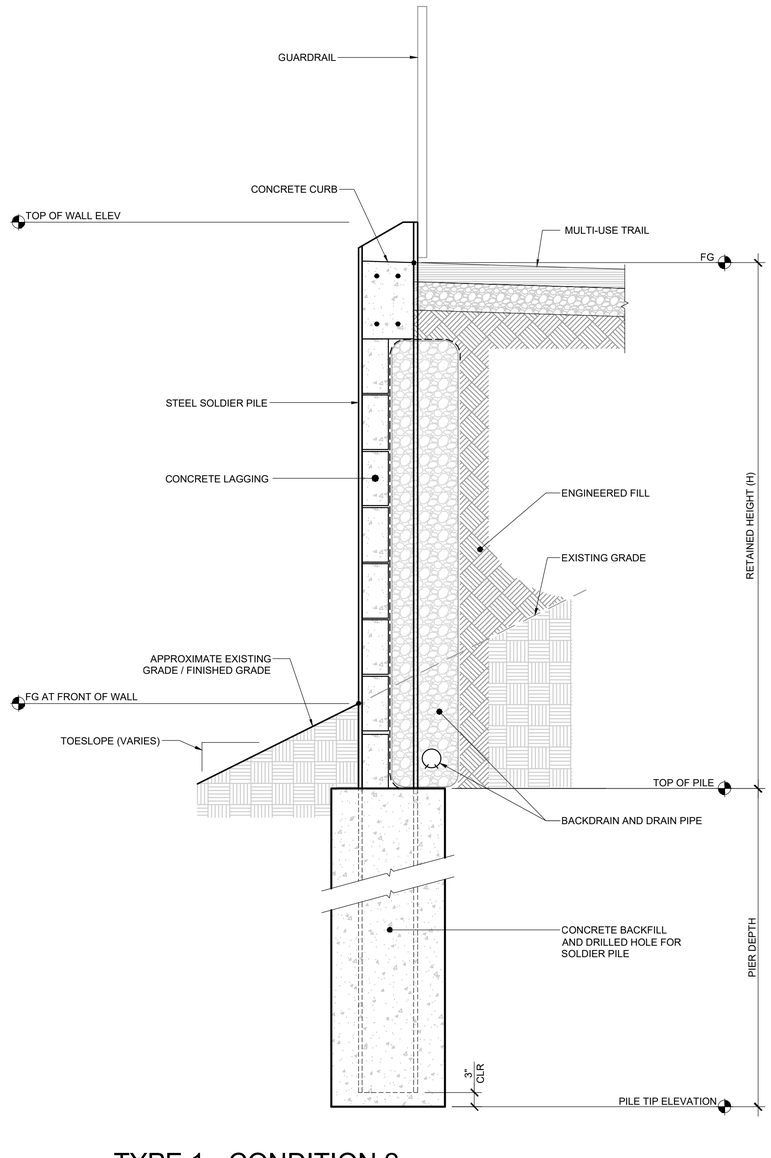
DATE	09/21/2022
DRAWN	
DESIGN	
CHECKED	

SCALE AS SHOWN
WD-1.01
VAULT NO.

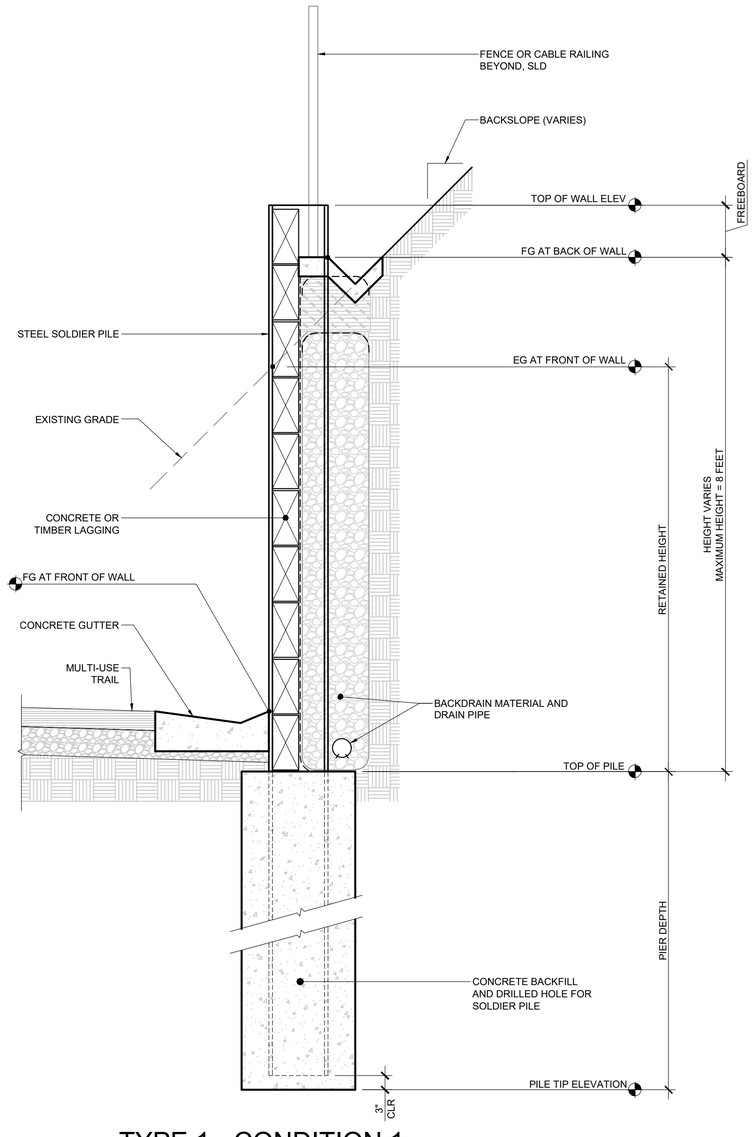
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



TYPE 2 - RETAINING WALL
SCALE: 3/4" = 1'-0"
3



TYPE 1 - CONDITION 2
RET WALL W/ TRAFFIC SURCHARGE
SCALE: 3/4" = 1'-0"
2



TYPE 1 - CONDITION 1
RET WALL WITH BACKSLOPE
SCALE: 3/4" = 1'-0"
1

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3166 · www.mme.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)
RETAINING WALL DETAIL SHEET

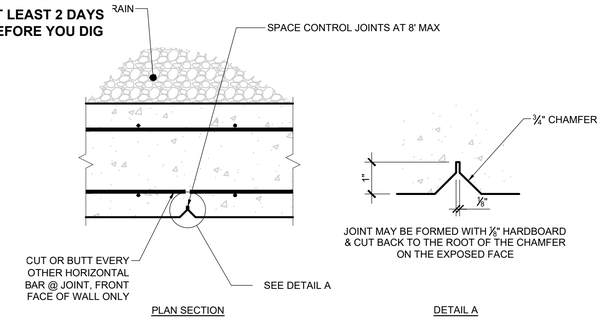
REFERENCES
FIELD BOOK:
DRAWING #:

DATE	09/21/2022
DRAWN	EDD
DESIGN	
CHECKED	
SCALE	AS SHOWN
	WD-1.02
VAULT NO.	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

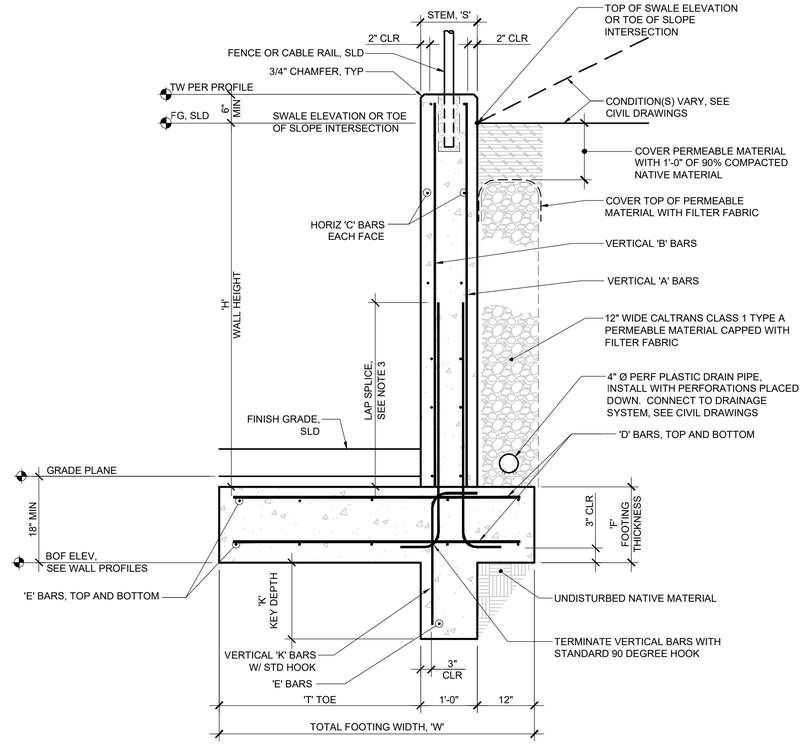
Layout Tab Name: WD-1.02 Xrefs: XC-0193-04-RWT-59.dwg XC-0193-04-RWT-59-Hatch.dwg EDC-0193-04-RWT-59.dwg c:\1193 RRW - Santa Cruz Rail Trail Segments 8 and 9\dwg\003 WD -102-103 Retaining Wall Details Soldier Pile.dwg Plotted By: edgar Plotted: Sep 21, 2022 - 1:55pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

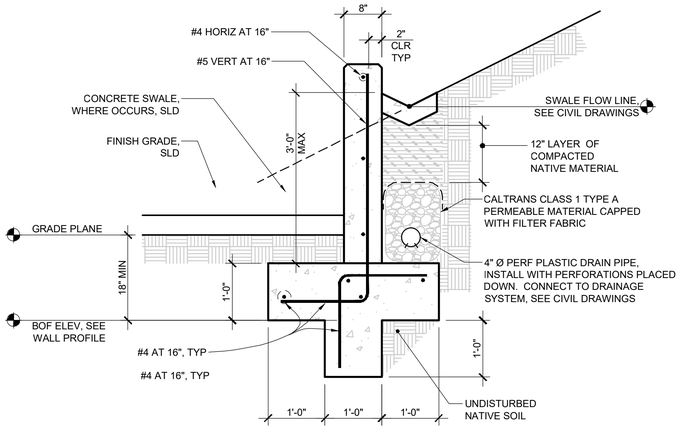


VERTICAL CONTROL JOINT 4
SCALE: 1 1/2" = 1'-0"

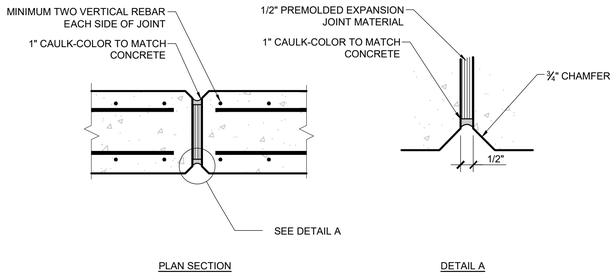
NOTES
1. STRUCTURAL BACKFILL SHALL NOT BE PLACED UNTIL THE CONCRETE HAS DEVELOPED A STRENGTH OF NOT LESS THAN 2500 POUNDS PER SQUARE INCH IN COMPRESSION, OR UNTIL THE CONCRETE HAS BEEN IN PLACE FOR 14 DAYS, WHICHEVER OCCURS FIRST.
2. THE BOTTOM OF FOOTING EXCAVATIONS SHALL BE FIRM, CLEAN AND FREE OF ANY LOOSE OR YIELDING SOILS. FOOTINGS SHALL BE POURED IN NEAT EXCAVATIONS WITHOUT THE USE OF SIDE FORMS. CAST TOE/KEY CONCRETE AGAINST UNDISTURBED NATIVE MATERIAL OR PREPARED SUBGRADE EXCEPT AS APPROVED BY THE GEOTECHNICAL ENGINEER.
3. AT THEIR OPTION, THE CONTRACTOR IS PERMITTED TO USE CONTINUOUS VERTICAL BARS FROM FOUNDATION TO TOP OF WALL . WHERE FOOTING DOWELS ARE USED, ALL VERTICAL BARS SHALL BE LAP SPLICED AND FOOTING DOWELS SHALL BE OF THE SAME SIZE AND SPACING AS BARS ABOVE.
4. MINIMUM FOOTING EMBEDMENT SHALL BE MEASURED FROM THE LOWEST EXISTING ADJACENT SOIL GRADE.



CONCRETE RETAINING WALL TYPICAL CROSS SECTION (H > 3') 3
SCALE: 3/4" = 1'-0"

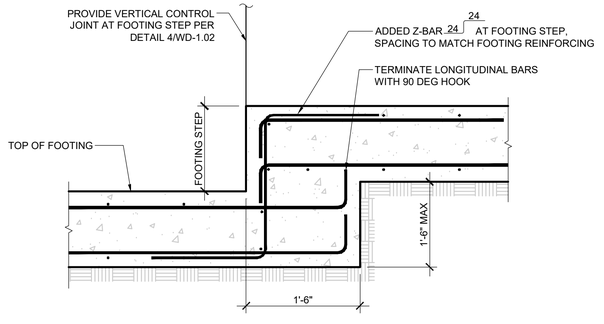


CONCRETE RETAINING WALL TYPICAL CROSS SECTION (H < 3') 1
SCALE: 3/4" = 1'-0"



NOTE: JOINT IS CONTINUOUS FROM TOP OF WALL TO BOTTOM OF FOOTING. CAULK MAY BE OMITTED AT FOOTING

VERTICAL EXPANSION JOINT 5
SCALE: 1 1/2" = 1'-0"



STEPPED WALL FOOTING 2
SCALE: NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
2240 Mattrut Avenue - Suite B - Santa Cruz, CA 95060
831.426.3166 www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION)
CONCRETE SPREAD FOOTING RETAINING WALLS

REFERENCES	DATE 09/21/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN EDD	WD-3.01
DRAWING #:	DESIGN	VAULT NO.
	CHECKED	

TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 09/21/2022

Layout Tab: Name: WD-3.01 Xrefs: -- PltStmp: \\V1168_RRW -- Santa Cruz Rail Trail\Segments 8 and 9\dwg\003 WD 301 Retaining Wall Details Conc Spread Ftg.dwg, Plotted By: edgar, Plotted: Sep 21, 2022 - 1:55pm

CITY OF SANTA CRUZ

PUBLIC WORKS DEPARTMENT

RAIL TRAIL SEGMENT 9 - TRAIL ON THE RAIL LINE (INTERIM TRAIL)

San Lorenzo Trestle Bridge to 17th Avenue

PROJECT DESCRIPTION

CONSTRUCTION OF A MULTI-USE TRAIL WILL BE LOCATED GENERALLY ALONG THE SANTA CRUZ BRANCH RAILROAD CENTERLINE WITH THE REMOVAL OF EXISTING TRACKS AND TIES THROUGH THE PROCESS OF RAILBANKING FROM THE EAST SIDE OF THE SAN LORENZO TRESTLE BRIDGE TO THE EAST SIDE OF 17TH AVENUE.

PROJECT DIRECTORY

OWNER
SANTA CRUZ COUNTY REGIONAL TRANSPORTATION COMMISSION
CONTACT: GRACE BLAKESLEE PHONE: (831) 460-3200
RAIL CONTACT: TOMMY TRAVERS FAX: (831) 460-6178

LANDSCAPE ARCHITECT
RRM DESIGN GROUP
3765 SOUTH HIGUERA, SUITE 102 PHONE: (949) 361-7950
SAN LUIS OBISPO, CA 93401 FAX: (949) 361-7955
CONTACT: KAYLA SZUBIELSKI

CIVIL ENGINEER
RRM DESIGN GROUP
325 DAVIS STREET PHONE: (510) 751-4910
SAN LEANDRO, CA 94577 FAX: (510) 686-4910
CONTACT: DARREN CHOY

ELECTRICAL ENGINEER
THOMA ELECTRIC
3562 EMPLEO ST. PHONE: (805) 543-3850
SAN LUIS OBISPO, CA
CONTACT: CHRIS PATCHIN

GEOTECHNICAL ENGINEER
PACIFIC CREST ENGINEERING
444 AIRPORT BLVD PHONE: (831) 722-9446
WATSONVILLE, CA 95076
CONTACT: CHRIS JOHNSON

STRUCTURAL ENGINEER
MESITI-MILLER ENGINEERING
224 WALNUT ST, SUITE B PHONE: (831) 426-3186
SANTA CRUZ, CA 95060
CONTACT: DALE HENDSBEE

TRAFFIC ENGINEER
WHITLOCK & WEINBERGER (W-TRANS)
1276 LINCOLN AVE, SUITE 204 PHONE: (510) 444-2600
SAN JOSE, CA 9525
CONTACT: STEVE FITZSIMMONS

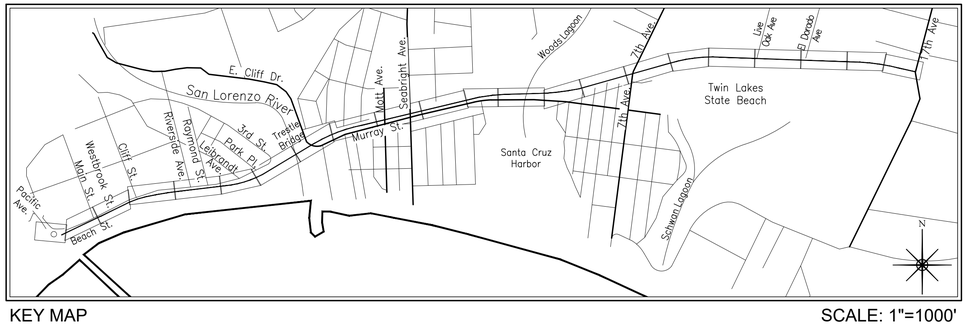
RAIL ENGINEER
ZEPHYR UAS/RAIL (ZUI)
725 W TOWN & COUNTRY RD, SUITE 550 PHONE: (714) 835-6355
ORANGE, CA 92868
CONTACT: ALFRED YALDA

CLIENT
CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT PHONE: (831) 420-5160
CONTACT: NATHAN NGUYEN FAX: (831) 420-5161

SECONDARY CLIENT
COUNTY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT PHONE: (831) 454-2160
CONTACT: ROB TIDMORE FAX: (831) 454-2385

VICINITY MAP

NOT TO SCALE



KEY MAP SCALE: 1"=1000'

SHEET INDEX

TS-1.01	TITLE SHEET
RS-1.01	GENERAL NOTES
CP-1.08-1.22	SEGMENT 9 FINAL SCHEMATIC PLANS
CP-1.10S	TRAFFIC SIGNAL MODS SEABRIGHT/MURRAY
CD-3.01-3.13	SEGMENT 9 TRAIL SECTIONS
BP-1.01	WOODS LAGOON BRIDGE PLAN
BD-1.01	WOODS LAGOON BRIDGE DETAILS
WD-1.01	RETAINING WALLS
WD-1.02	RETAINING WALL DETAILS

FINAL SCHEMATIC DESIGN SUBMITTAL

STATE PROJECT TITLE:
STATE PROJECT NUMBER:

REFERENCES	DATE 07/22/22	SCALE AS SHOWN	
FIELD BOOK:	DRAWN KS/EK/MMS	TS-1.01	
DRAWING #:	DESIGN KS/EK/MMS	VAULT NO.	
	CHECKED MS/KS		

Layout Tab Name: TS-1.01, Xrefs: ..\Base_Sheets\Base_Layout 1.dwg, ..\Data_SIG-CP1.10S-SEABRIGHT.dwg, ..\Data_SIG-CP1.10S-MURRAY.dwg
\\prodfs.pw.scruzdom.net\data\Projects\Rail Trail Segment 9\Schematic Design\Layout & Schematics\Kayla\Sheets\Plots\TS-0101-01-RRM-48.dwg, Plotted By: mmeeks, Plotted On: May 19, 2023 - 7:05pm

TREE NOTES

1. EXISTING TREE NOTES
   Existing trees over 3-inches in diameter within the Limit of Work were field surveyed and numbered from 2769 to 3547. The construction documents employ the following tree number coding system:

   - #28XX denotes an existing tree with a numbered metal forestry tag affixed to its trunk.
   - #28XX* denotes an existing tree with an assigned number, but with no metal forestry tag affixed to its trunk.
   - #28XX N/H/S denotes an existing tree that qualifies as a Regional Native, Heritage or Speciman Tree as defined by the City/County of Santa Cruz.

POTENTIAL STAGING AREAS

- CITY PARKING LOT 18 (PACIFIC AVENUE ROUNDABOUT)
- SEABRIGHT AVENUE / WATSON STREET PARKING LOT
- EATON STREET
- SIMPKINS SWIM CENTER PARKING LOT
- 901 7TH AVENUE
- 2700 BROMMER STREET
- 835 BAY AVENUE

ABBREVIATIONS

AB	AGGREGATE BASE OR ANCHOR BOLT
ABV	ABOVE
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING/PAVEMENT
ADJ	ADJACENT
AGG	AGGREGATE
ALT	ALTERNATE
AP	ANGLE POINT
APPROX/APPX	APPROXIMATE
ARCH	ARCHITECT (URAL)
BC/BOC	BACK OF CURB
BEL	BELOW
BF / BOF	BOTTOM OF FOOTING
BLDG	BUILDING
BLK	BLOCK
BOT	BOTTOM
BOW	BACK OF WALK
BR	BOTTOM OF RAMP
BRG	BEARING
CB	CATCH BASIN
CF	CUBIC FOOT
CI	CAST IRON
CIP	CAST IN PLACE
C/L	CENTERLINE
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS, CONTINUE
CP	CENTER POINT
CR	CURB RETURN
CTC	CENTER TO CENTER
CTR	CENTER
DAS	DIRECTION AS SHOWN
DET	DETAIL
DF	DRINKING FOUNTAIN
DI	DRAIN INLET
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DS	DOWN SPOUT
DWG	DRAWING
EA	EACH
EJ	EXPANSION JOINT
ELECT	ELECTRICAL
ELEV	ELEVATION
ENCL	ENCLOSURE
EP	EDGE OF PAVEMENT
EQ	EQUAL
EQPT	EQUIPMENT
ESMT	EASEMENT
EX	EXISTING
EXIST	EXISTING
(E)	EXISTING
FAB	FABRICATION
FBO	FURNISHED BY OTHERS
FC / FOC	FRONT OF CURB
FF	FINISHED FLOOR
FFE	FINISHED FLOOR ELEVATION
FG	FINISHED GRADE
FIN	FINISH (ED)
FL	FLOWLINE
FOC	FACE OF CONCRETE
FOF	FACE OF FINISH
FOM	FACE OF MASONRY
FOS	FACE OF STEP
FOW	FACE OF WALL
FND	FOUNDATION
FS	FINISHED SURFACE OF PAVING/SURFACING
FST	FINISHED SURFACE SYNTHETIC TURF
FTG	FOOTING
FUT	FUTURE
GA	GAUGE
GB	GRADE BREAK
GKT	GASKET
GALV	GALVANIZED
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GRATE
HB	HOSE BIB
HC	HANDICAPPED
HCAP	HANDICAPPED
HDB	HEADBOARD
HEX	HEXAGONAL
HOR	HORIZONTAL
HP	HIGH POINT
HT	HEIGHT
ID	INSIDE DIAMETER
INT	INTERSECTION
INV	INVERT
IR, IRR, IRRG	IRRIGATION
JT	JOINT
L	LENGTH
LB	LAG BOLT
LH	LEFT HAND
LOC	LOCATION, LOCATE
LIP	LIP OF GUTTER PAN
LP	LOW POINT
LS	LAG SCREW
LT	LEFT
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MED	MEDIUM
MFG	MANUFACTURING
MFR	MANUFACTURE(R)
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MAINLINE
(N)	NEW
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OCEW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OPP	OPPOSITE
OPT	OPTIONAL
OTM	OTHER TRACK MATERIAL
PA	PLANTING AREA
PC	POINT OF CURVE
PERF	PERFORATE (D)
PERP	PERPENDICULAR
PFE	PUBLIC FACILITIES EASEMENT
PL	PROPERTY LINE
POB	POINT OF BEGINNING
POC	POINT OF CONNECTION
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PT	POINT, POINT OF TANGENCY
PTL	PRESSURE TREATED LUMBER
PUE	PUBLIC UTLITIES EASEMENT
PVC	POLYVINYL CHLORIDE
PVMT/PVNG	PAVEMENT OR PAVING
R, RAD	RADIUS
RDWD	REDWOOD
REBAR	REINFORCING BAR
REF	REFERENCE
REM	REMOVE
REQ'D	REQUIRED
REV	REVISION(S), REVISED
RH	RIGHT HAND
ROW	RIGHT OF WAY
RT	RIGHT
S	SLOPE
SCH	SCHEDULE
SD	STORM DRAIN
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
SL	SLOPE
SPEC	SPECIFICATION(S)
SQ	SQUARE
SS	SANITARY SEWER
S/S	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
STRUC	STRUCTURE/ STRUCTURAL
SURF	SURFACE
SWCL	SIDEWALK CENTERLINE
SYS	SYSTEM
SYN	SYNTHETIC
TBC	TOP BACK OF CURB
TC	TOP OF CURB
TF / TOF	TOP OF FOOTING
TR	TOP OF RAMP
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VAR	VARIES
VERT	VERTICAL
W	WATER
W/	WITH
W/O	WITHOUT
WL	WATERLINE
@	AT
℄	CENTERLINE
Ø	DIAMETER
⌀	SQUARE FEET

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

GENERAL NOTES & ABBREVIATIONS

REFERENCES
FIELD BOOK:

DRAWING #:
TS-0193-04-RBT-S9

DATE	07/22/22
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN

RS-1.01

VAULT NO.

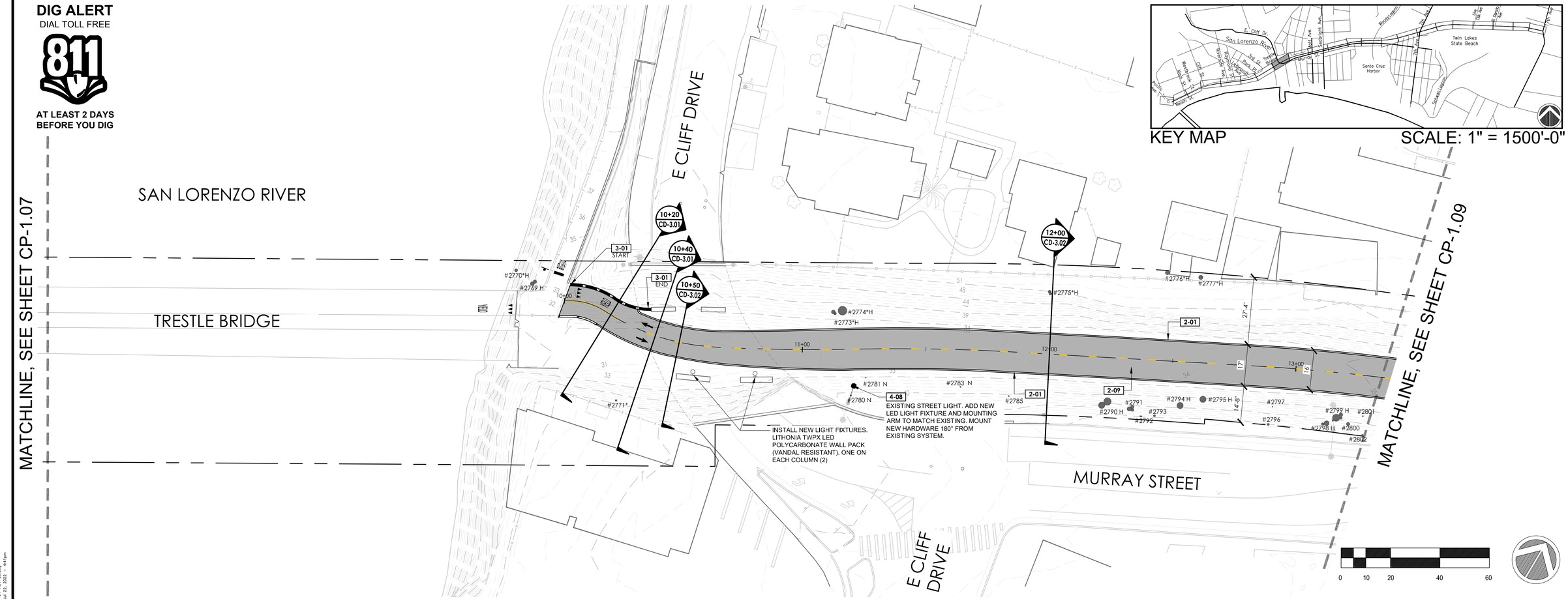
TRAIL NEXT TO THE RAIL LINE (ULTIMATE TRAIL CONFIGURATION) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: RS-1.01 Images: 1200px-California_t.svg.png ; Xrefs: XTB-0193-04-RWF.dwg; XDWG-0193-04-RCT.dwg
N:\2021\0193-04-RCT8-9-Santa-Cruz-Rail-Trail-8-9\Redone with Trail\Landscape-Architecture\Task-4b-Schematic Design\Sheet-Files\TS-0193-04-RBT-S9.dwg, Plotted By: KMZcalebski, Plotted: Jul 22, 2022 - 3:15pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	POST AND WIRE FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#2XXX #2XXX* #2XXX N/H/S	EXISTING TREE #2XXX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2XXX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2XXX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

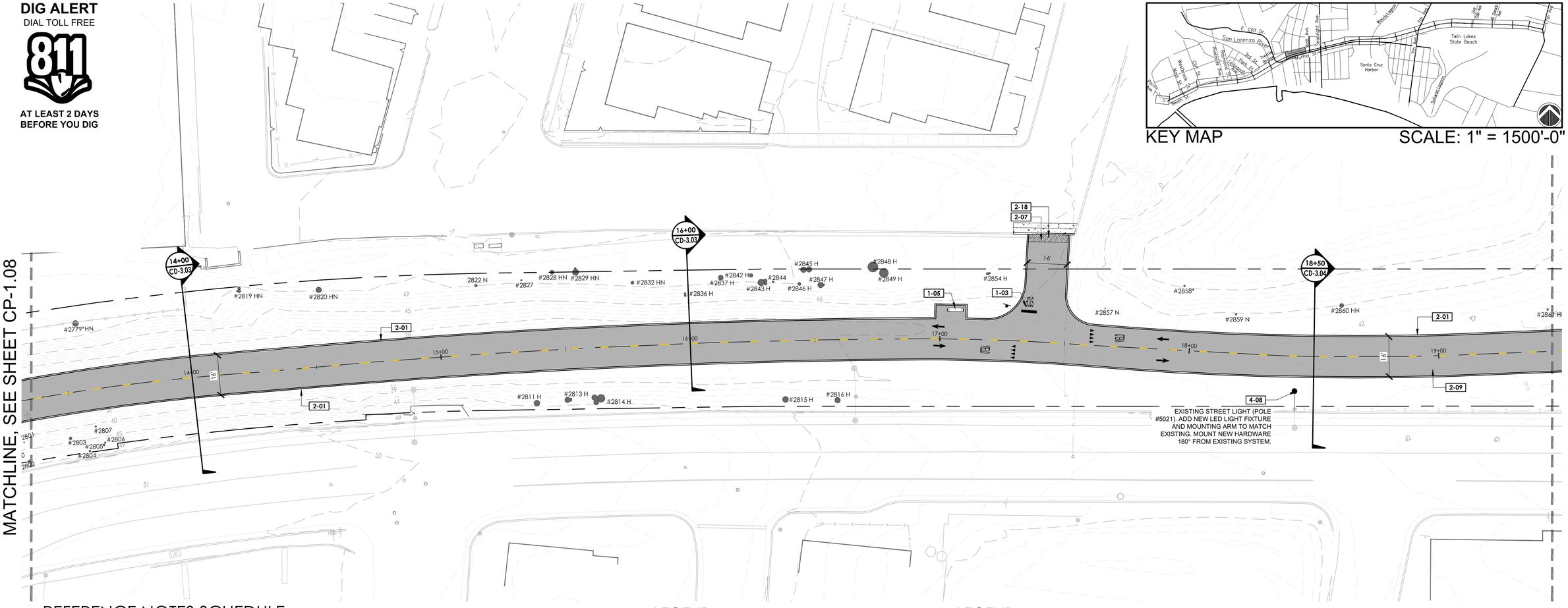
FINAL SCHEMATIC PLANS

REFERENCES FIELD BOOK:	DATE	07/22/2022	SCALE 1" = 20'-0"
	DRAWN	MMS	CP-1.08
DRAWING #: CP-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.08, Images: , Xrefs: XTB-0193-04-RBT-S9.dwg, XSA-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWR-0193-04-RBT10.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\10\193-04-RDTA-Santa Cruz Rail Trail-B-SV\Bidspace with Trail\Landscape Architecture\Tidal-B-Schematic Design\Sheet Files\CP-0193-04-RBT-S8.dwg, Plotted By: KMSzalewski, Plotted: Jul 22, 2022 - 4:41pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

0 10 20 40 60

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE 1" = 20'-0"

CP-1.09

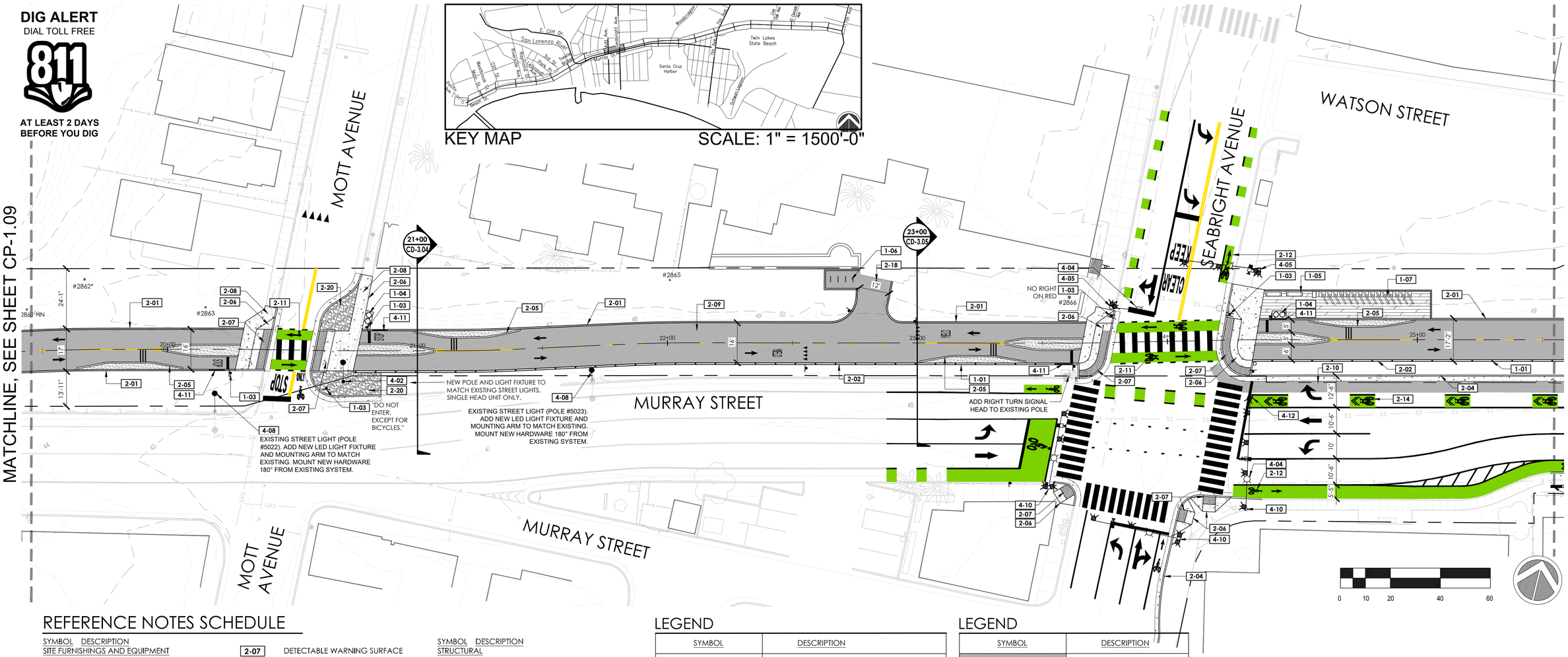
VAULT NO.

Layout Tab Name: CP-1.09, Images: , Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XCWAP-0193-04-RETR-S9.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RWT-S9.dwg, N:\2000\0193-04-RETR-Santa Cruz-Rail Trail-8-9\Plotting with Trail\Landscape Architecture\Sheet Sheets\ Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSJaSalas, Plotted: Jul 22, 2022 - 4:42pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#2BXX #2BXX* #2BXX N/H/S	EXISTING TREE #2BXX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK. #2BXX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK. #2BXX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CP-1.10
VAULT NO.

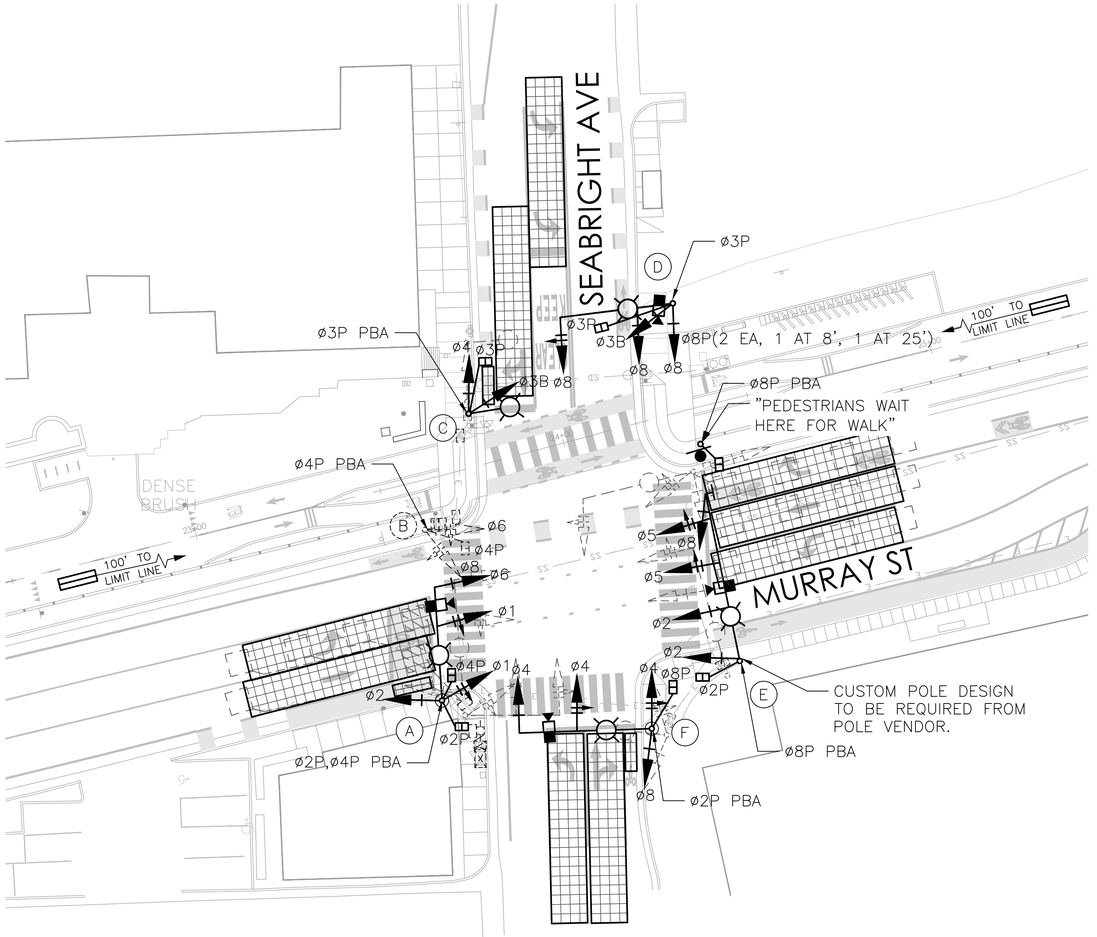
TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

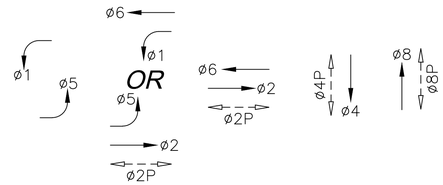
Layout Tab Name: CP-1.10, Images: Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWMP-0193-04-RCI19.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
C:\0001\0193-04-RCI19-Santa Cruz Rail-Trail-8-9\Bidwork with Trail\Landscape-Architecture\Visio-8-Schematic Design\Sheet-Files\CP-0193-04-RBT-S9.dwg, Plotted By: MMSpickelmier, Plotted: Jul 22, 2022 - 4:42pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

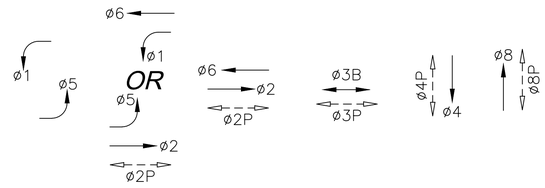
LEGEND (THIS SHEET ONLY)

- EXISTING VEHICLE HEAD
- NEW VEHICLE HEAD
- EXISTING PEDESTRIAN HEAD
- NEW PEDESTRIAN HEAD
- VIDEO DETECTION ZONE
- VIDEO CAMERA
- SIGN
- SIGN ON TRAFFIC SIGNAL POLE





EXISTING PHASE DIAGRAM



PROPOSED PHASE DIAGRAM

REMOVAL LIST:

2 – TYPE 1B POLE
1 – 25' MAST ARM POLE
1 – 30' MAST ARM POLE
1 – 35' MAST ARM POLE
1 – STREET LIGHT POLE
1 – TYPE 15
13 – VEHICLE HEADS
3 – PULL BOXES

N

0 20' 40'
SCALE: 1"=20'

30% DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

W-Trans
w-trans.com | (510) 444-2600
414 13th St. Floor 5
Oakland, CA 94612

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAFFIC SIGNAL MODIFICATION SEABRIGHT AVE/MURRAY ST

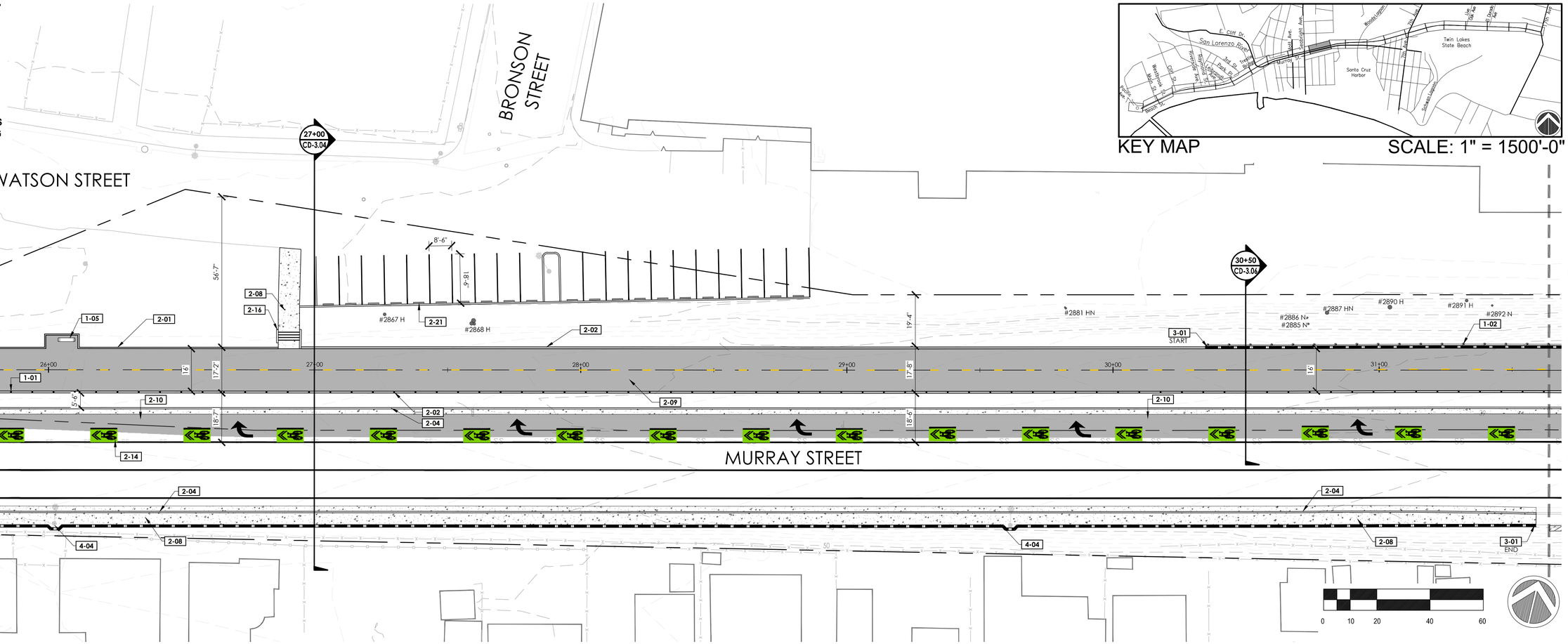
REFERENCES
FIELD BOOK:

DRAWING #:
SCR012

DATE	07/22/22	SCALE	1" = 20'
DRAWN	ACJ		CP-1.10S
DESIGN	SF	VAULT NO.	
CHECKED			

Layout Tab Name: CP-1.10S, Images: ..\Xrefs\CP-0193-04-RMT-09.dwg; XTR-0193-04-RMT.dwg; Stamp_MidDiamond.dwg; XT-0193-04-RMT-09.dwg; XC-0193-04-RMT-09.dwg; XEB-0193-04-RMT-09.dwg; XFB-0193-04-RMT.dwg
N:\2020\0193-04-W-Santa Cruz Rail Trail-Phase 4 Multiuse with Rail\Submittals\Final Schematic Design\Cutsheet Files\Xrefs\0193-04-RMT-09.dwg, Plotted By: MEdlebeck, Plotted: Jul 21, 2022 - 11:04am

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT

1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION

SYMBOL DESCRIPTION
PEDESTRIAN AND TRAFFIC CONTROL

2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP

SYMBOL DESCRIPTION
STRUCTURAL

3-01	RETAINING WALL

SYMBOL DESCRIPTION
UTILITIES

4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
H	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#2BXX #2BXX* #2BXX N/HS	EXISTING TREE #2BXX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2BXX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #2BXX N/HS: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

MATCHLINE, SEE SHEET CP-1.10

MATCHLINE, SEE SHEET CP-1.12

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN

CP-1.11

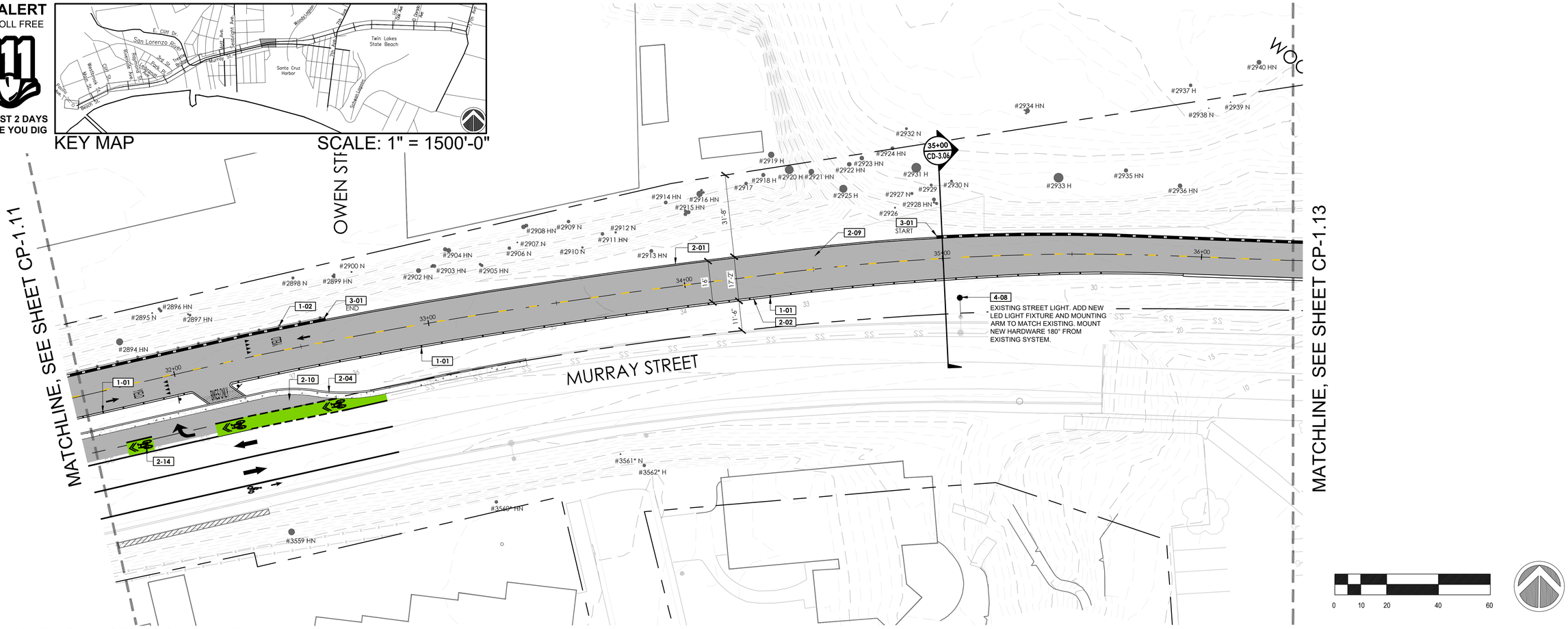
VAULT NO.

Layout Tab: Name: CP-1.11, Images: Xrefs: P:\193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XCMAP-0193-04-RBTMP-S9.dwg, XM-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg, N:\000\10\193-04-RBT19-Santa Cruz-Rail-Trail-#-9\Addwork with Trail\Landscape-Architecture\Task-8-Schematic Design\Sheet-Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSzlatek, Plotted: Jul 22, 2022 - 4:42pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

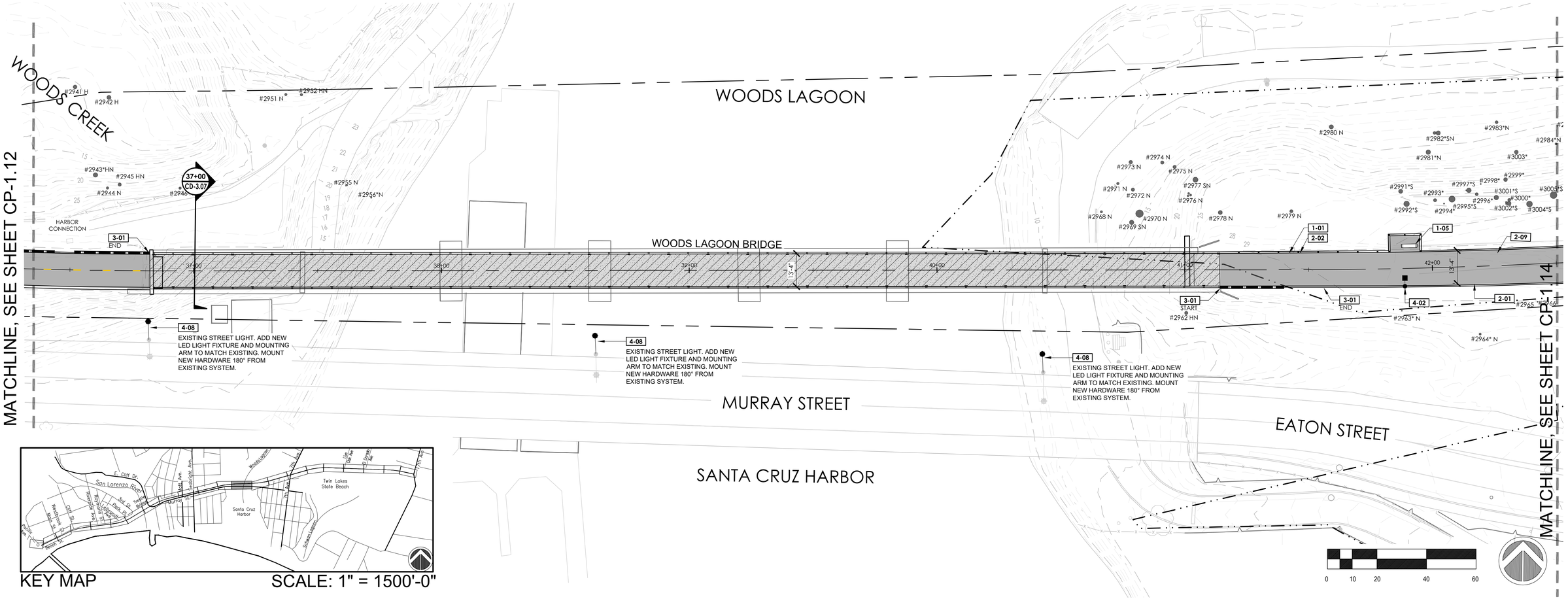
SCALE AS SHOWN

CP-1.12

VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.12 Images: Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWG-0193-04-RCH19.dwg, XY-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\000\10\193-04-RCH19-Santa Cruz Rail Trail-8-9\Roadway with Trail\Landscape Architecture\Vistas-In Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: MdGadaleta, Plotted: Jul 22, 2022 - 4:42pm



KEY MAP SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

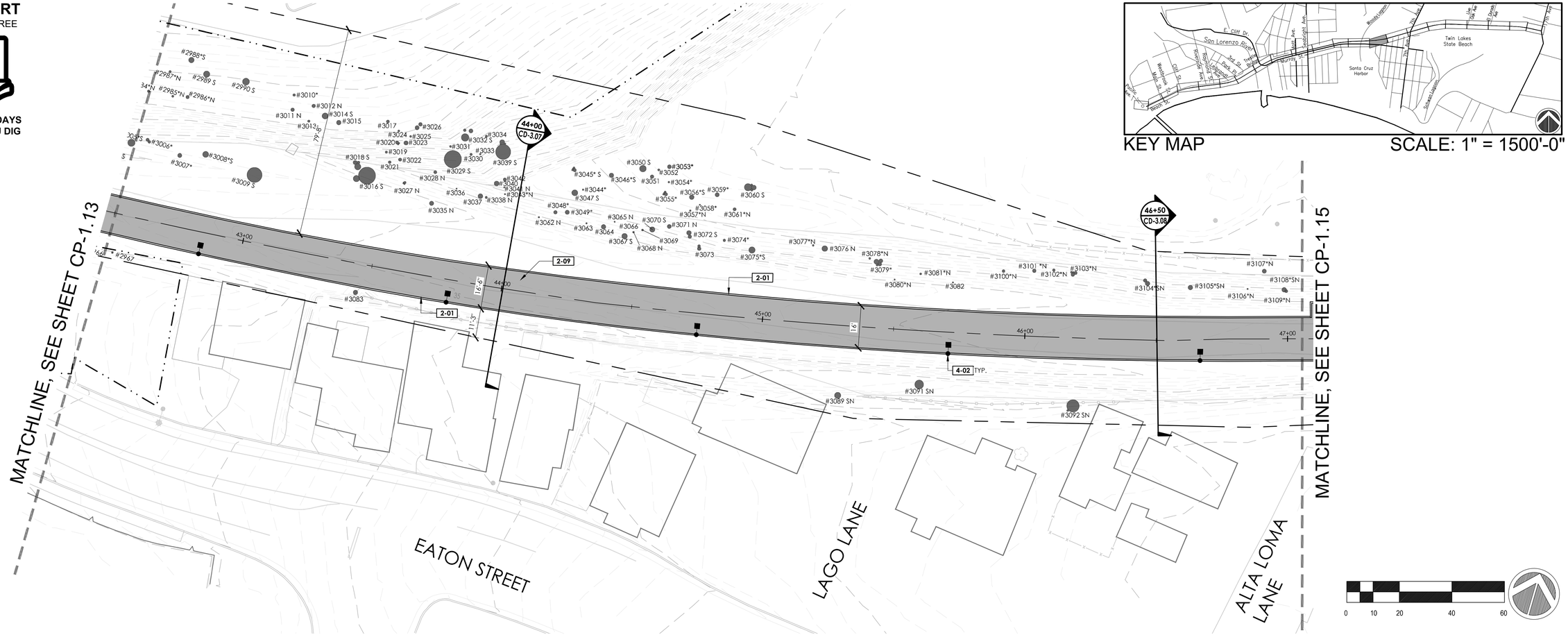
FINAL SCHEMATIC PLANS

REFERENCES FIELD BOOK:	DATE	07/22/2022	SCALE AS SHOWN
	DRAWN	MMS	CP-1.13
DRAWING #: CP-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.13, Images: Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWP-0193-04-RBT-S9.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg N:\2001\0193-04-RCT\9-Santa Cruz Rail-Trail-8-9\Plotset ••• ath Trail\Landscape-Architecture\Slide-8-Schematic Design\Sheet-Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSzabelski, Plotted: Jul 22, 2022 — 4:40pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"

0 10 20 40 60

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
	SITE FURNISHINGS AND EQUIPMENT
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
	PEDESTRIAN AND TRAFFIC CONTROL
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
	STRUCTURAL
3-01	RETAINING WALL
	UTILITIES
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/N/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/N/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
30332 Commo Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

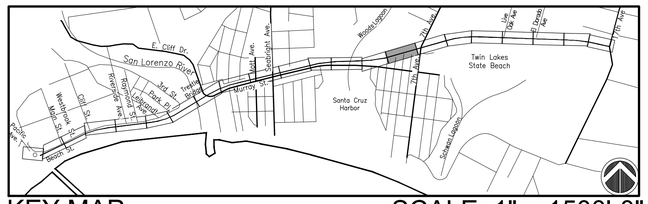
DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS
SCALE	AS SHOWN
	CP-1.14
VAULT NO.	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

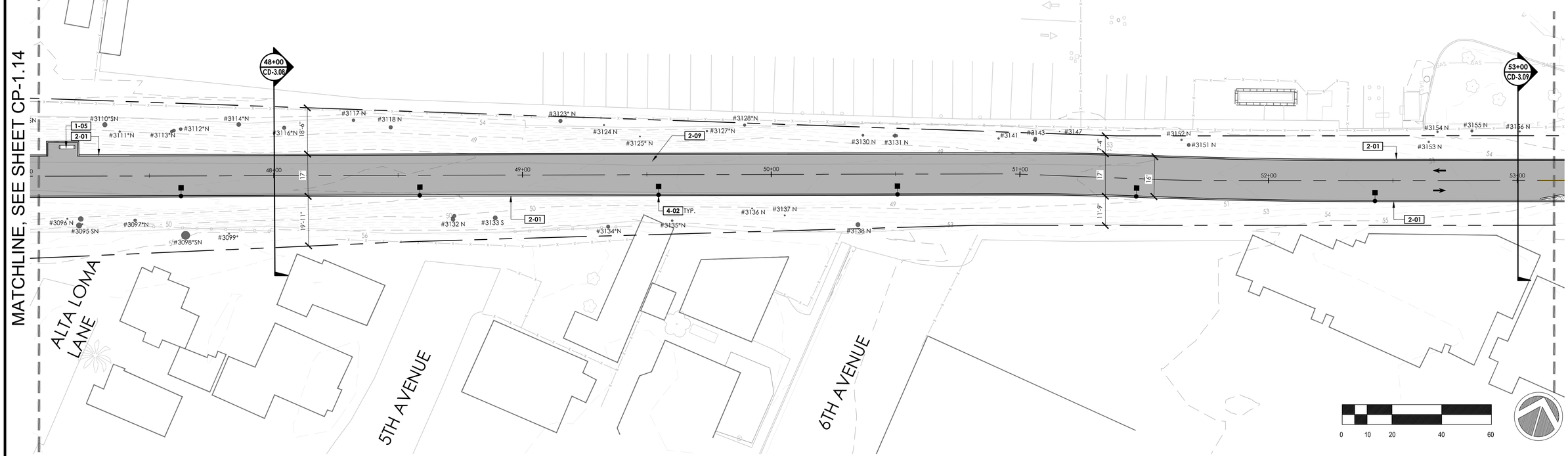
Layout Tab Name: CP-1.14, Images: Xrefs: XTB-0193-04-RBT-S8.dwg, XSB-0193-04-RBT-S8.dwg, XC-0193-04-RBT-S8.dwg, XDWP-0193-04-RBT-S8.dwg, Pr-0193-04-RBT-S9.dwg, TT-0193-04-RBT-S9.dwg
N:\2021\10193-04-RCTP-Santa Cruz Rail-Trail-8-9\Bidset with Trail\Landscape-Architecture\Plan-8-Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSzabelski, Plotted: Jul 22, 2022 - 4:43pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SC SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

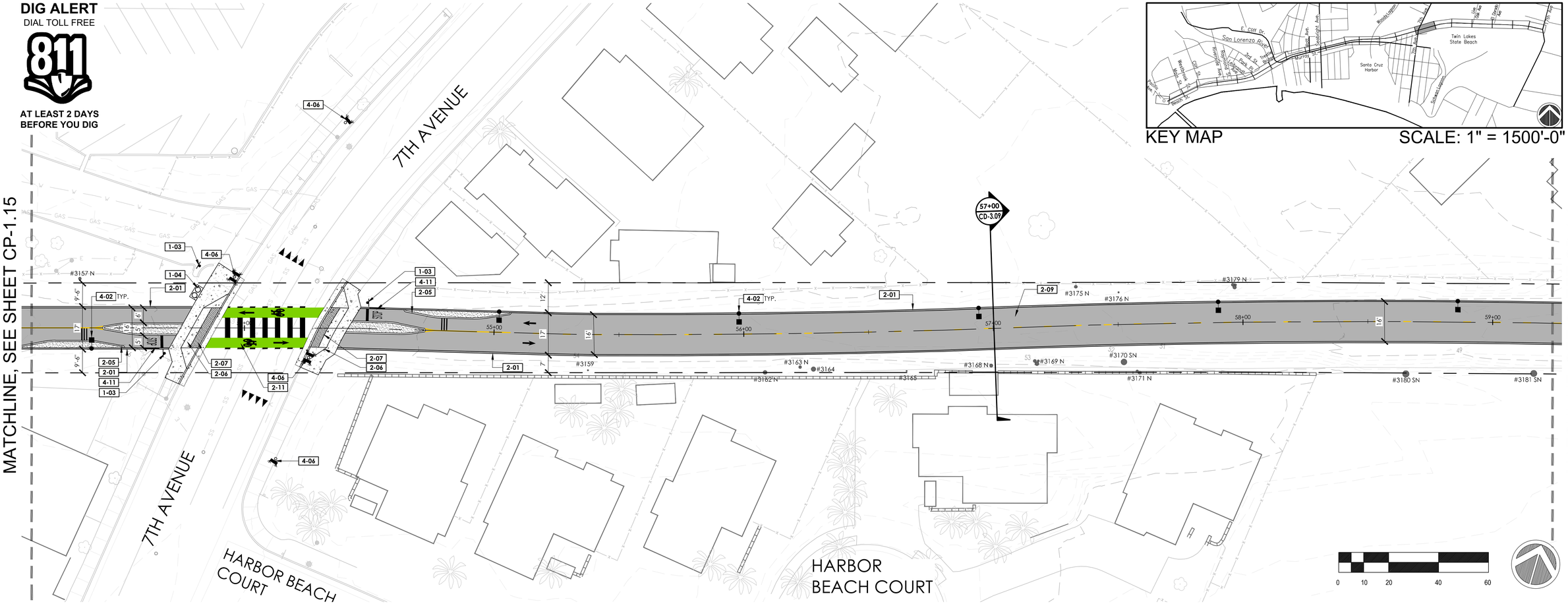
DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS
SCALE	AS SHOWN
	CP-1.15
VAULT NO.	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.15, Images: Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWM-0193-04-RBT-S9.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\0193-04-RCTB-Santa Cruz Rail-Trail-8-9\Bidset ▸ ish Trail\Landscape-Architecture\Slide-8-Schematic Design\Sheet-Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSzabelski, Plotted: Jul 22, 2022 — 4:43pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/HS	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/HS: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

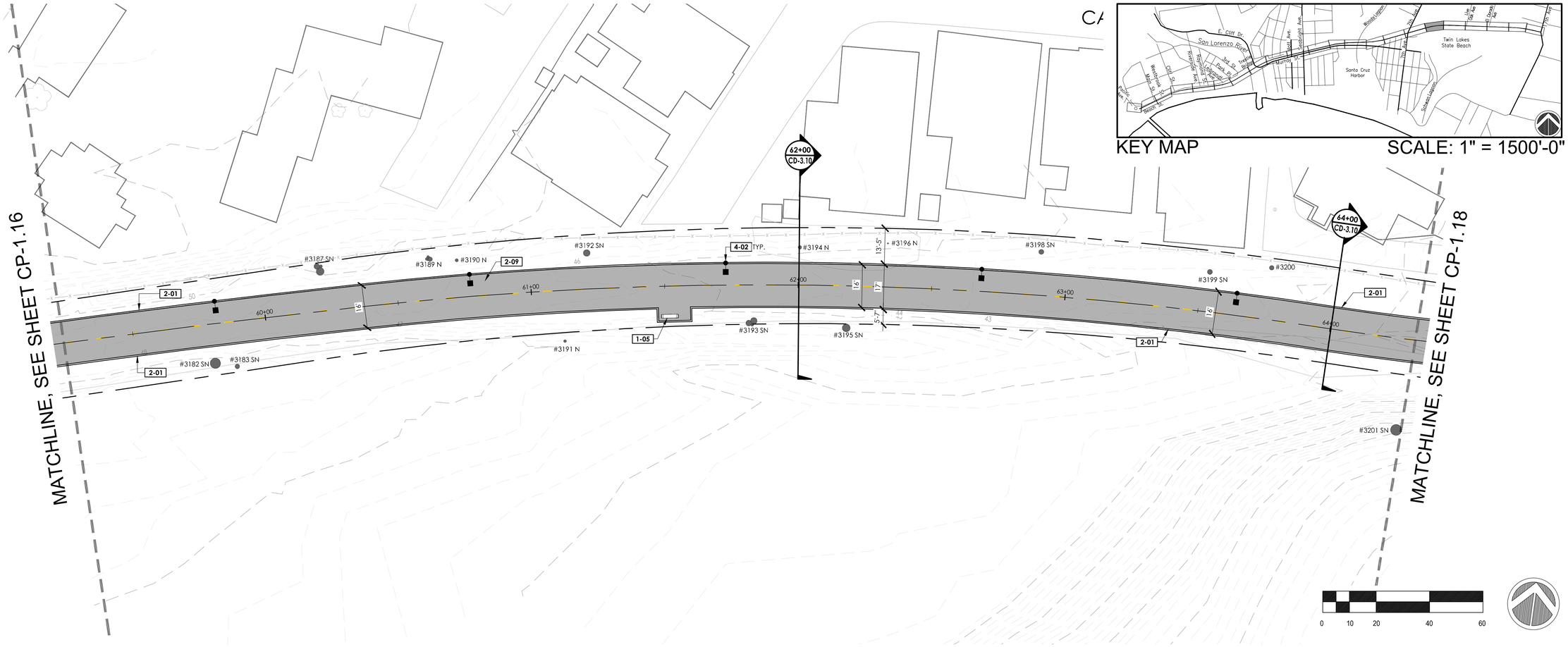
DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CP-1.16
VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout File Name: CP-1.16_Images_Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWAB-0193-04-RETAIN.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\0193-04-RCTA-Santa Cruz Rail Trail-B-4\Wallace with Trail\Landscape Architecture\Table-By-Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSgubelski, Plotted: Jul 22, 2022 - 4:43pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
	SITE FURNISHINGS AND EQUIPMENT
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
	PEDESTRIAN AND TRAFFIC CONTROL
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
	STRUCTURAL
3-01	RETAINING WALL
	UTILITIES
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX.N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX.N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL ON THE RAIL LINE (INTERIM TRAIL)
FINAL SCHEMATIC PLANS

REFERENCES	DATE	07/22/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN	MMS	CP-1.17
DRAWING #: CP-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

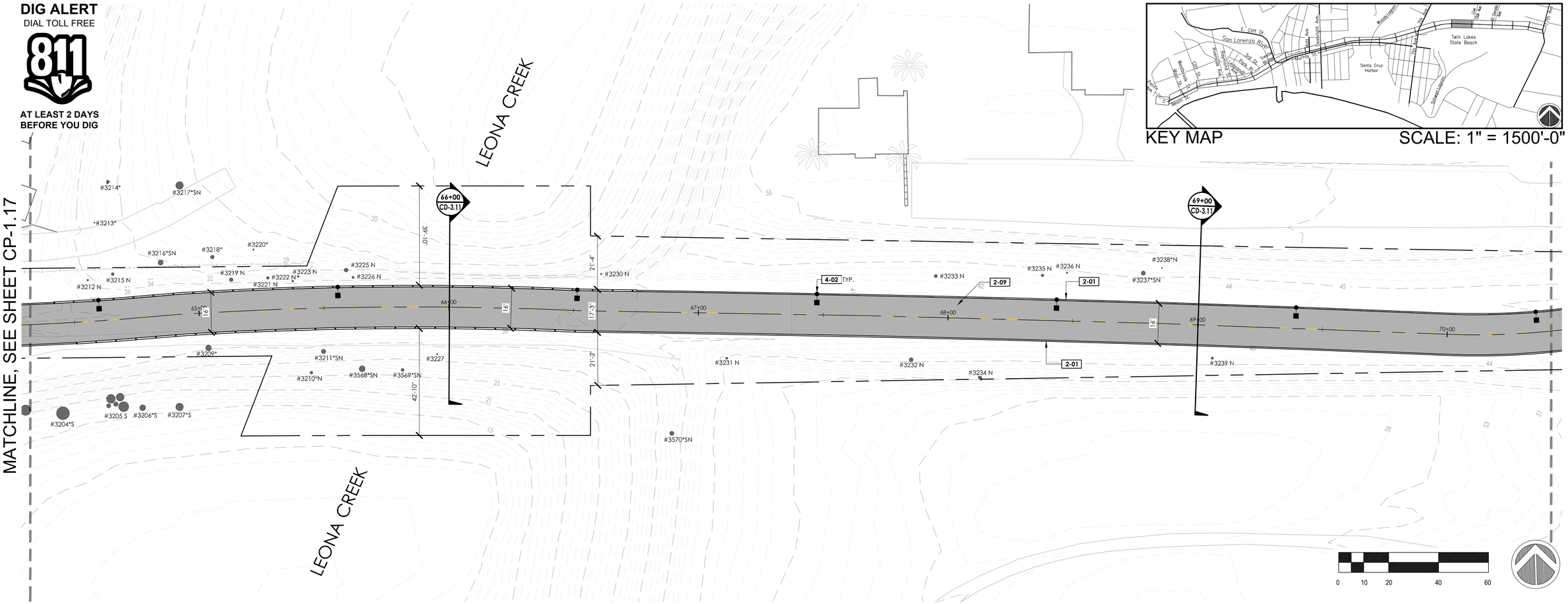
TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.17, Images: , Xrefs: XTB-0193-04-RBT-S8.dwg, XTB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S8.dwg, XC-0193-04-RBT-S9.dwg, XD1MAP-0193-04-RC19.dwg, XH-0193-04-RBT-S8.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg, N:\0001\0193-04-RC19-Santa Cruz-Rail-Trail-8-9\Notebook with Tools\Landscape-Architecture\Task-8-Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMDubbelde, Plotted: Jul 22, 2022 - 4:43pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN

CP-1.18

VAULT NO.

Layout Tab Name: CP-1.18, Images: , Refs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XCWAP-0193-04-RBT-S9.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2000\0193-04-RCTP-Santa Cruz-Rail Trail-8 & 9\Plotbook with Trail\Landscape+Architecture\Cover Sheet+Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMDoublas, Plotted: Jul 22, 2022 - 4:43pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

KEY MAP

SCALE: 1" = 1500'-0"

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL ON THE RAIL LINE (INTERIM TRAIL)
FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:
DRAWING #: CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CP-1.19
VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

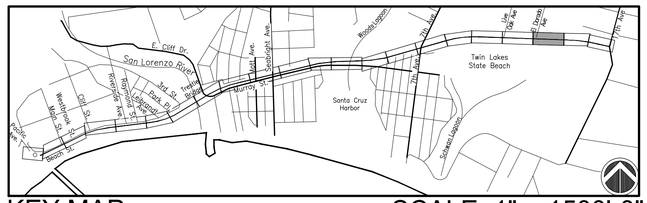
Layout Tab Name: CP-1.19, Images: , Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWG-0193-04-RBT-S9.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\10\193-04-RCTA-Santa Cruz Rail Trail-8-9\Plotsave with Trip\Landscape Architecture\Tidal-B-Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted: Jul 22, 2022 - 4:43pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

(E) PG&E POLE #6074

EL DORADO AVENUE

TRENCH FOR POWER CONNECTION



KEY MAP SCALE: 1" = 1500'-0"

MATCHLINE, SEE SHEET CP-1.19

MATCHLINE, SEE SHEET CP-1.21

NEW POLE MOUNTED LIGHT FIXTURES. COORDINATE WITH PG&E FOR POWER. POSSIBLY FROM (E) POLE #6074.

80+00 CD-3.13

4-02 TYP.

REPLACE EXISTING PARKING STALLS WITH ADA PARKING STALLS

0 10 20 40 60

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/H/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK. #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK. #28XX N/H/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

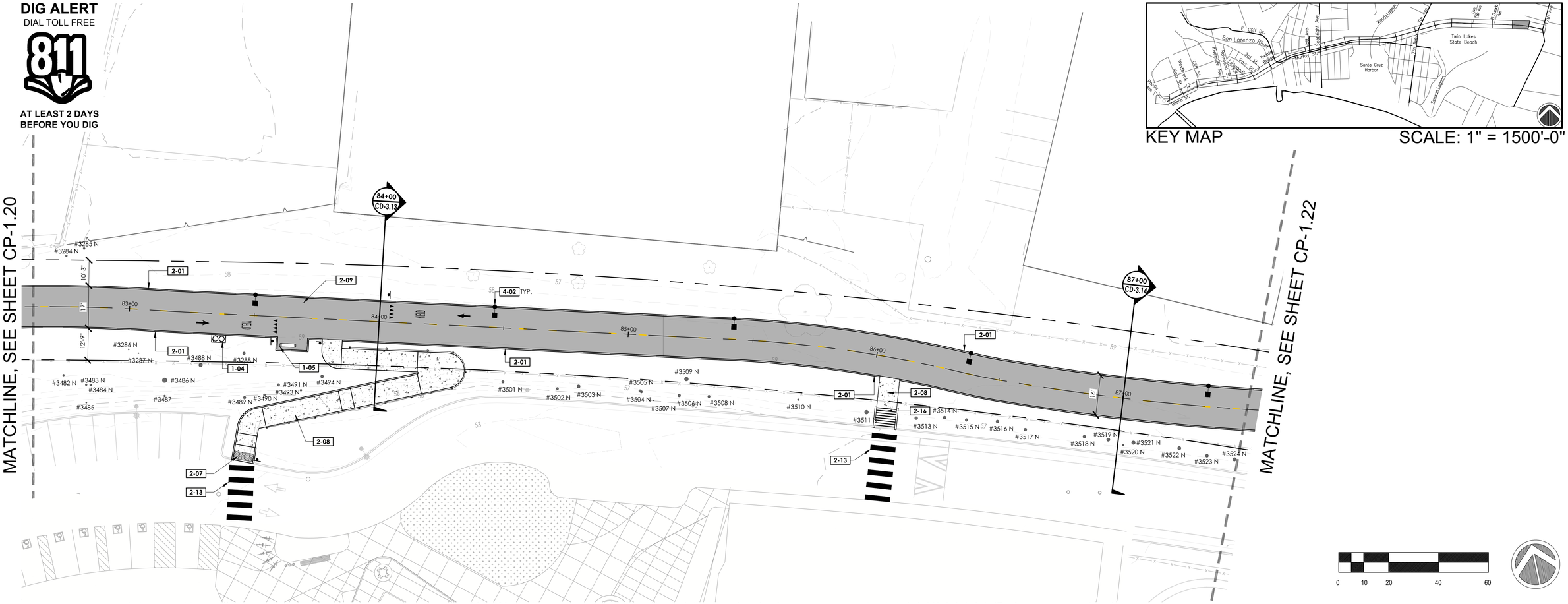
DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS
SCALE	AS SHOWN
	CP-1.20
VAULT NO.	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.20, Images: Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDMAP-0193-04-RCH.dwg, Xh-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2021\10193-04-RCTR-Santa Cruz Rail Trail-8-9\Working with Trail\Landscape Architecture\Tasks-8b-Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: MMSzydelko, Plotted: Jul 22, 2022 - 4:46pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG



KEY MAP SCALE: 1" = 1500'-0"

0 10 20 40 60

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

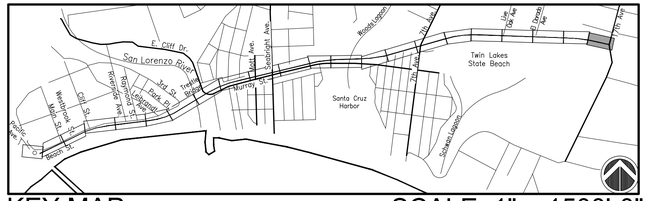
SCALE AS SHOWN

CP-1.21

VAULT NO.

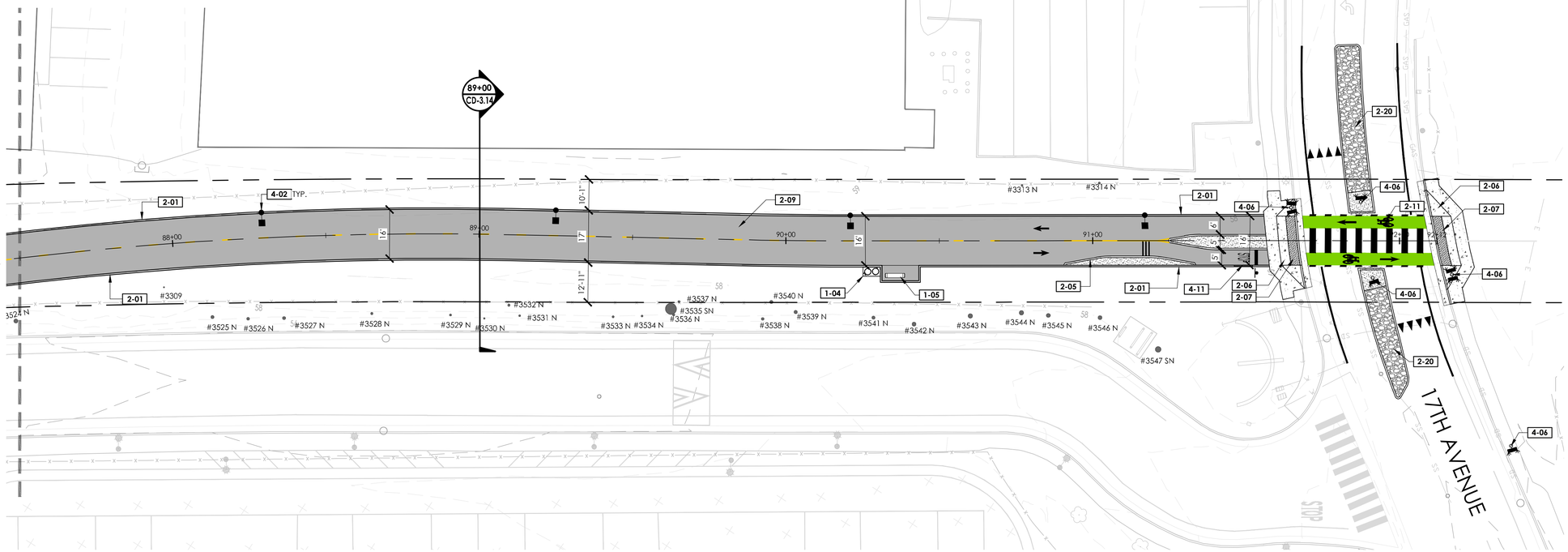
Layout File Name: CP-1.21, Image: , Xrefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWA-0193-04-RETW.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\0193-04-RCT\e-Docs-Cruz-Rail-Trail-B-W\Plotted with Trail\Landscape-Architecture\Sets-By-Scheme\Sc. Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSgubelek, Plotted: Jul 22, 2022 - 4:44pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



KEY MAP

SCALE: 1" = 1500'-0"



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
SITE FURNISHINGS AND EQUIPMENT	
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-03	PROPOSED SIGN
1-04	TRASH RECEPTACLES
1-05	BENCH
1-06	BIKE RACK
1-07	BIKE SHARE STATION
PEDESTRIAN AND TRAFFIC CONTROL	
2-01	6" WIDE CURB
2-02	8" WIDE CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-06	CURB RAMP
2-07	DETECTABLE WARNING SURFACE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-11	CROSSBIKE MARKINGS
2-12	CLASS II BIKE CROSSING MARKINGS
2-13	CONTINENTAL CROSSWALK STRIPING
2-14	SHARROW MARKINGS
2-16	PROPOSED STAIRS
2-18	FLEXIBLE BOLLARD
2-19	4" BLUE THERMOPLASTIC TRAFFIC STRIPE
2-20	3"-5" COBBLE
2-21	WHEELSTOP
STRUCTURAL	
3-01	RETAINING WALL
UTILITIES	
4-01	PIP EXISTING EQUIPMENT
4-02	PROPOSED LIGHT
4-04	RELOCATED LIGHT
4-05	RELOCATED TRAFFIC SIGNAL
4-06	SOLAR RRFB (RECTANGULAR RAPID FLASHING BEACON)
4-08	NEW LIGHT FIXTURE ON EXISTING POLE
4-10	NEW MAST ARM POLE
4-11	LEAN RAIL
4-12	BLANK OUT SIGN

LEGEND

SYMBOL	DESCRIPTION
	SCCRTC RIGHT OF WAY
	EXISTING FENCE
	SEPARATION FENCE
	GUARDRAIL
	RETAINING WALL
	RETAINING WALL W/ GUARDRAIL
EXISTING RELOCATED PROPOSED	SIGNS
	RRFB (RECTANGULAR RAPID FLASHING BEACON)
#28XX #28XX* #28XX N/A/S	EXISTING TREE #28XX: DENOTES AN EXISTING TREE WITH A NUMBERED METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX*: DENOTES AN EXISTING TREE WITH AN ASSIGNED NUMBER, WITHOUT A METAL FORESTRY TAG AFFIXED TO ITS TRUNK #28XX N/A/S: DENOTES AN EXISTING TREE THAT QUALIFIES AS A NATIVE, HERITAGE OR SPECIMAN TREE AS DEFINED BY THE CITY/COUNTY OF SANTA CRUZ
	DETECTABLE WARNING SURFACE
LIGHT ON EX. FIXTURE ROADWAY LIGHT TRAIL LIGHT SURFACE MOUNTED WALLPACK	PROPOSED LIGHTS

LEGEND

SYMBOL	DESCRIPTION
	HMA PAVEMENT
	CONCRETE PAVEMENT
	DECOMPOSED GRANITE
	3"-5" COBBLE
	BRIDGE WITH FIBERGLASS REINFORCED POLYMER DECK

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CP-1.22 | Image: XRefs: XTB-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XC-0193-04-RBT-S9.dwg, XDWG-0193-04-RP19.dwg, XH-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\10193-04-RC19-Santa Cruz-Rail Trail-8-9\Bidspace with Trail\Landscape Architecture\Tidal-B-Schematic Design\Sheet Files\CP-0193-04-RBT-S9.dwg, Plotted By: KMSzalewski, Plotted: Jul 22, 2022 – 4:44pm

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

FINAL SCHEMATIC PLANS

REFERENCES
FIELD BOOK:

DRAWING #:
CP-0193-04-RBT-S9

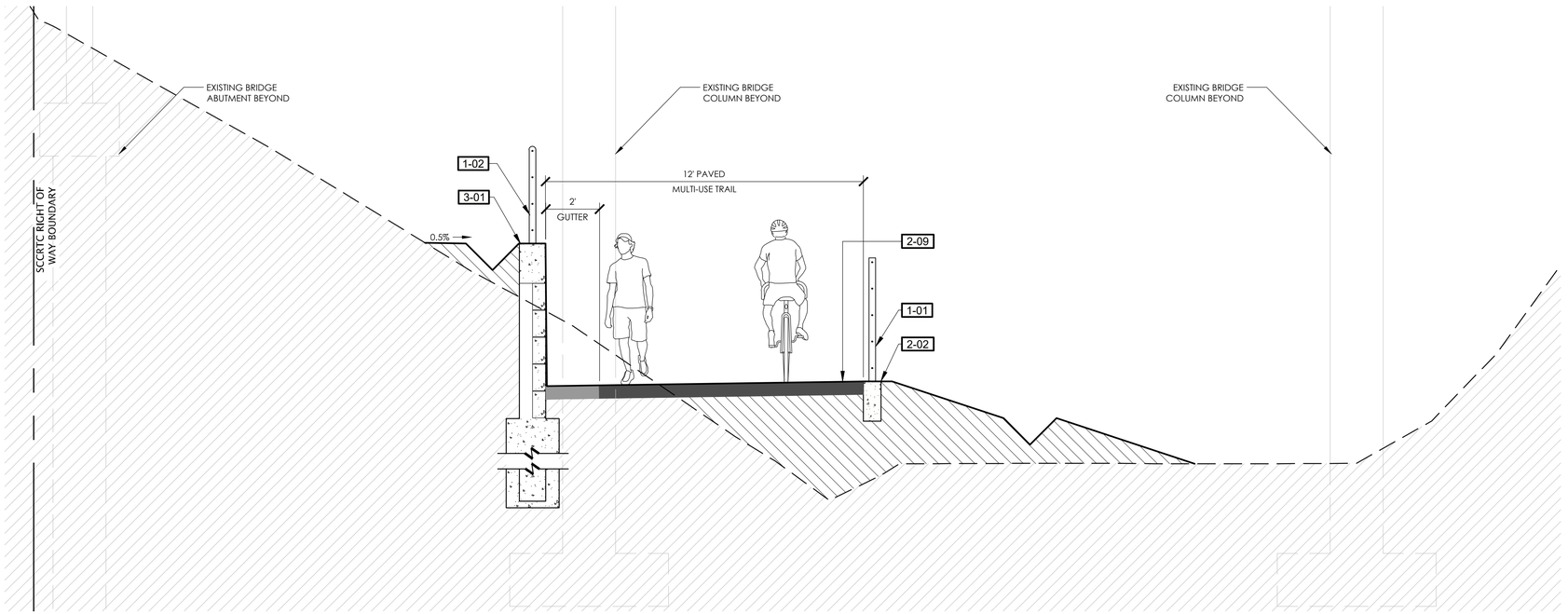
DATE	07/22/2022
DRAWN	MMS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN

CP-1.22

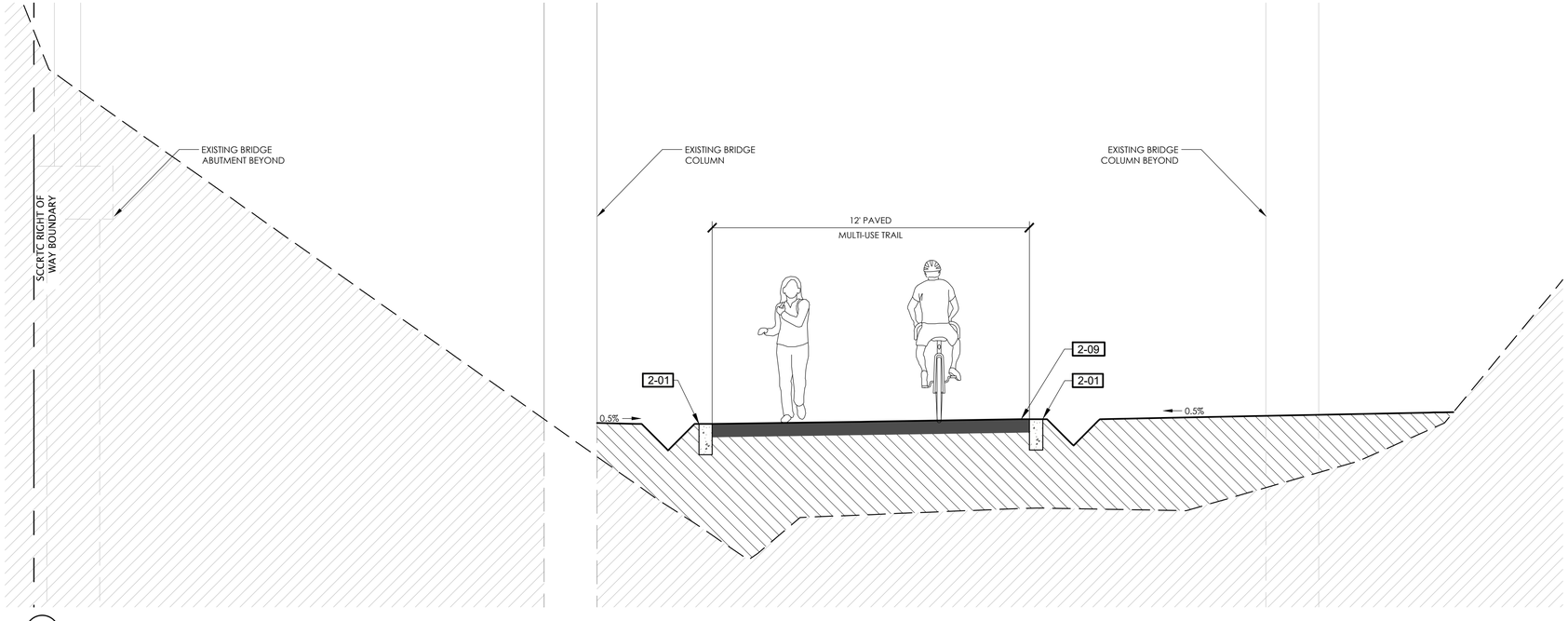
VAULT NO.

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



10+20

SCALE 3/8"=1'-0"



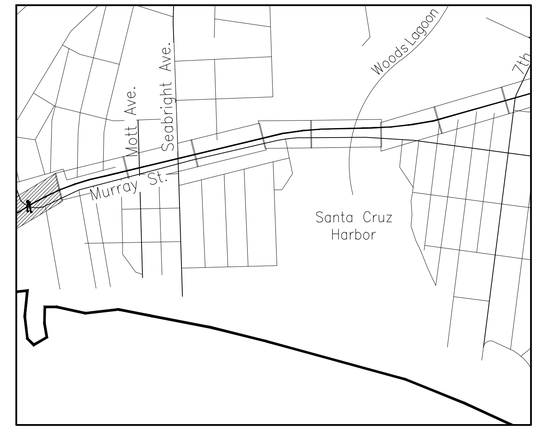
10+40

SCALE 3/8"=1'-0"

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN

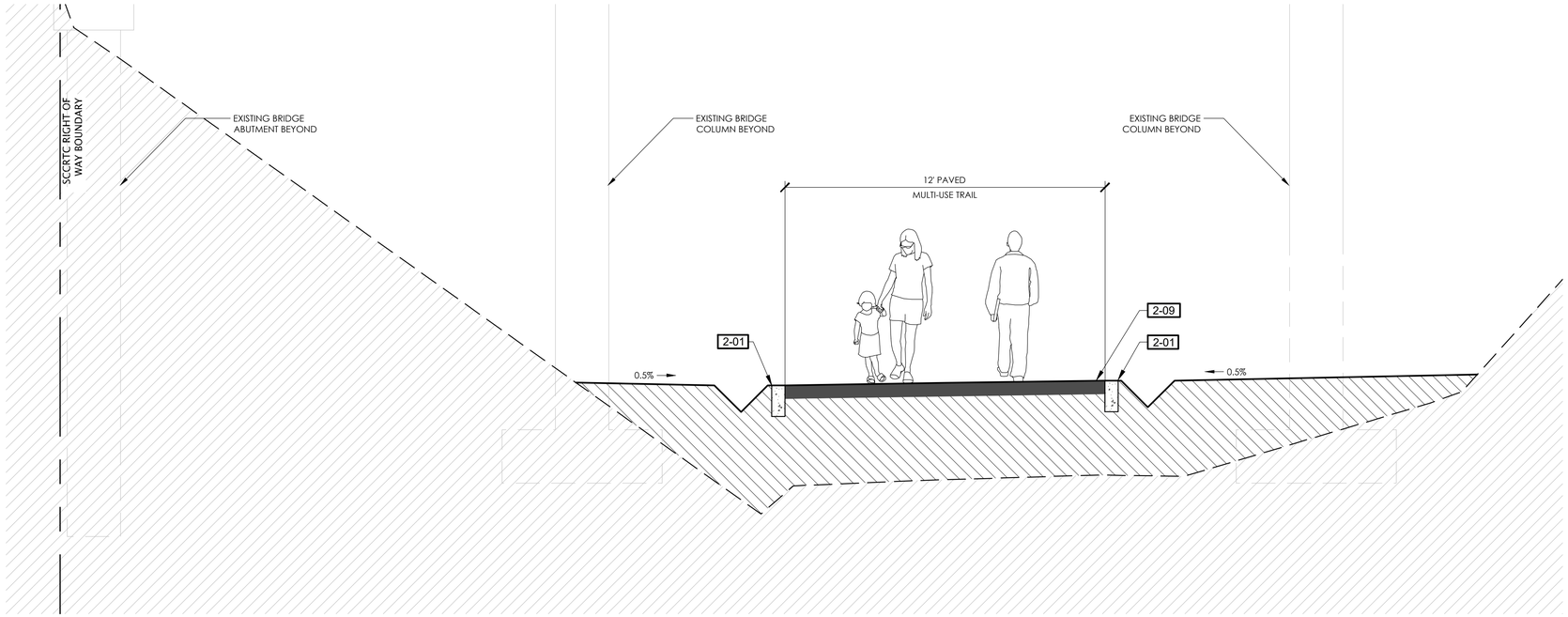
CD-3.01

VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CD-3.01, Xrefs: XC-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XTB-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\000\10\93-04-8619-Santa Cruz-Rail-Trail-8-9\Address with Trail\Landscape-Architecture\Task-8-Schematic Design\Sheet-Files\SEC-0193-04-RBT-S9.dwg, Plotted By: MdSzabelski, Plotted: Jul 22, 2022 - 5:18pm

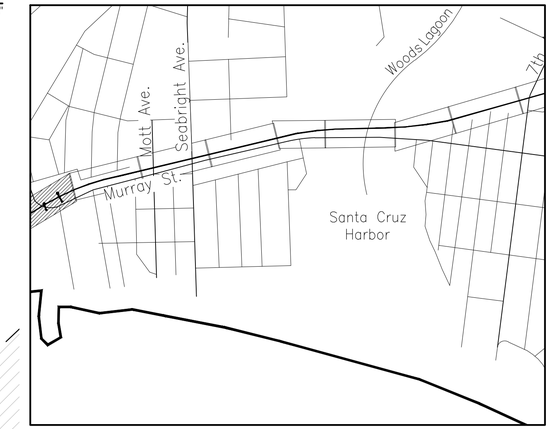
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

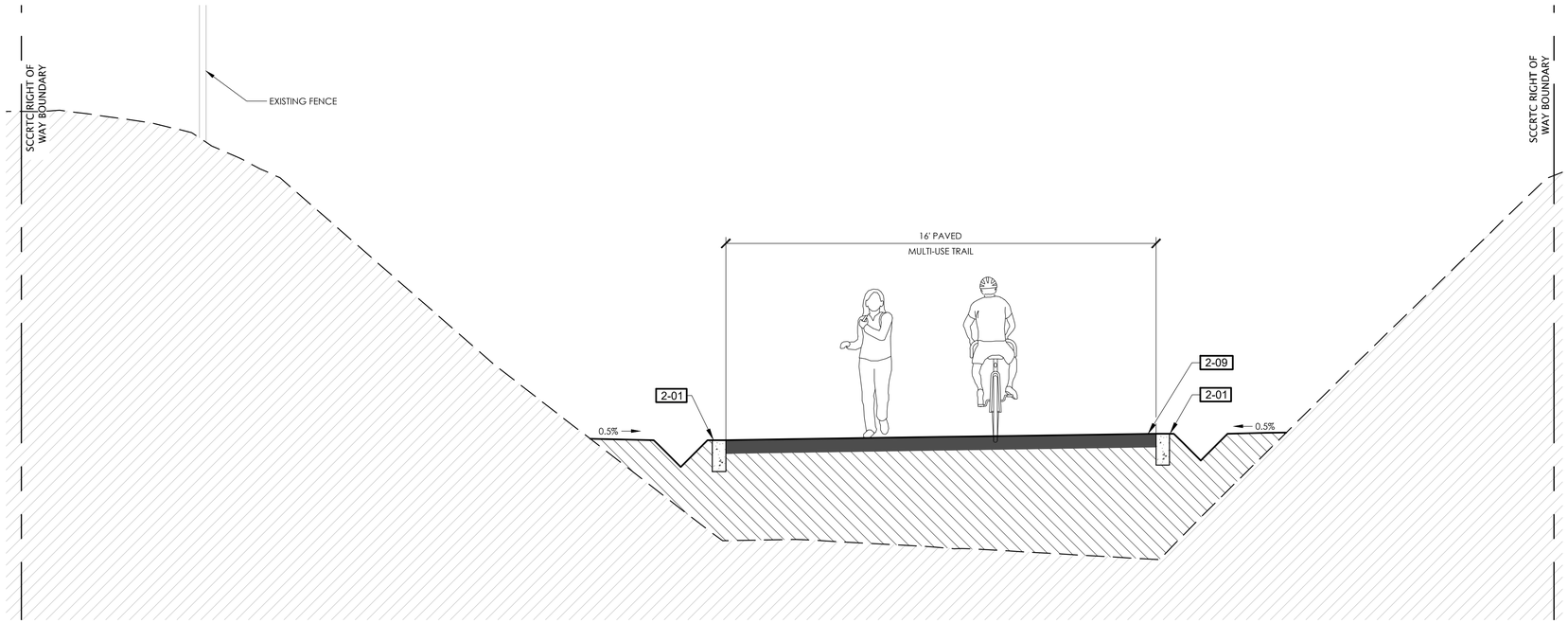
RAIL TRAIL SEGMENTS 8 & 9

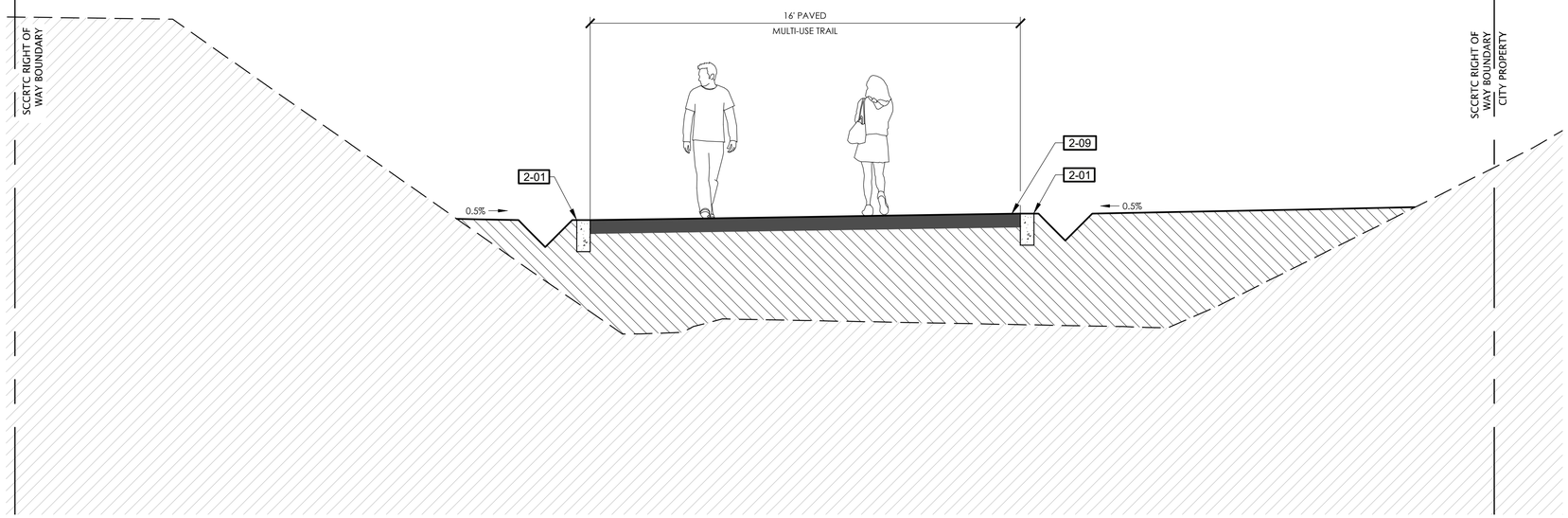
TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES	DATE	07/22/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN	KS	CD-3.02
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

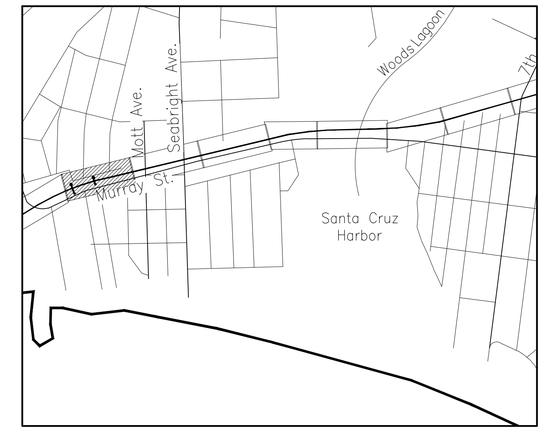




REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CD-3.03, Image: , Xrefs: XC-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XTB-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg
N:\2001\10193-04-RCTA-Santa Cruz Rail Trail-B-8\Roadway with Trail\Landscape Architecture\Plan Sheets - B-8\Schematic Design\Sheet Files\SEC-0193-04-RBT-S9.dwg, Plotted By: KMDaSilveira, Plotted: Jul 22, 2022 – 5:19pm

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
3233 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

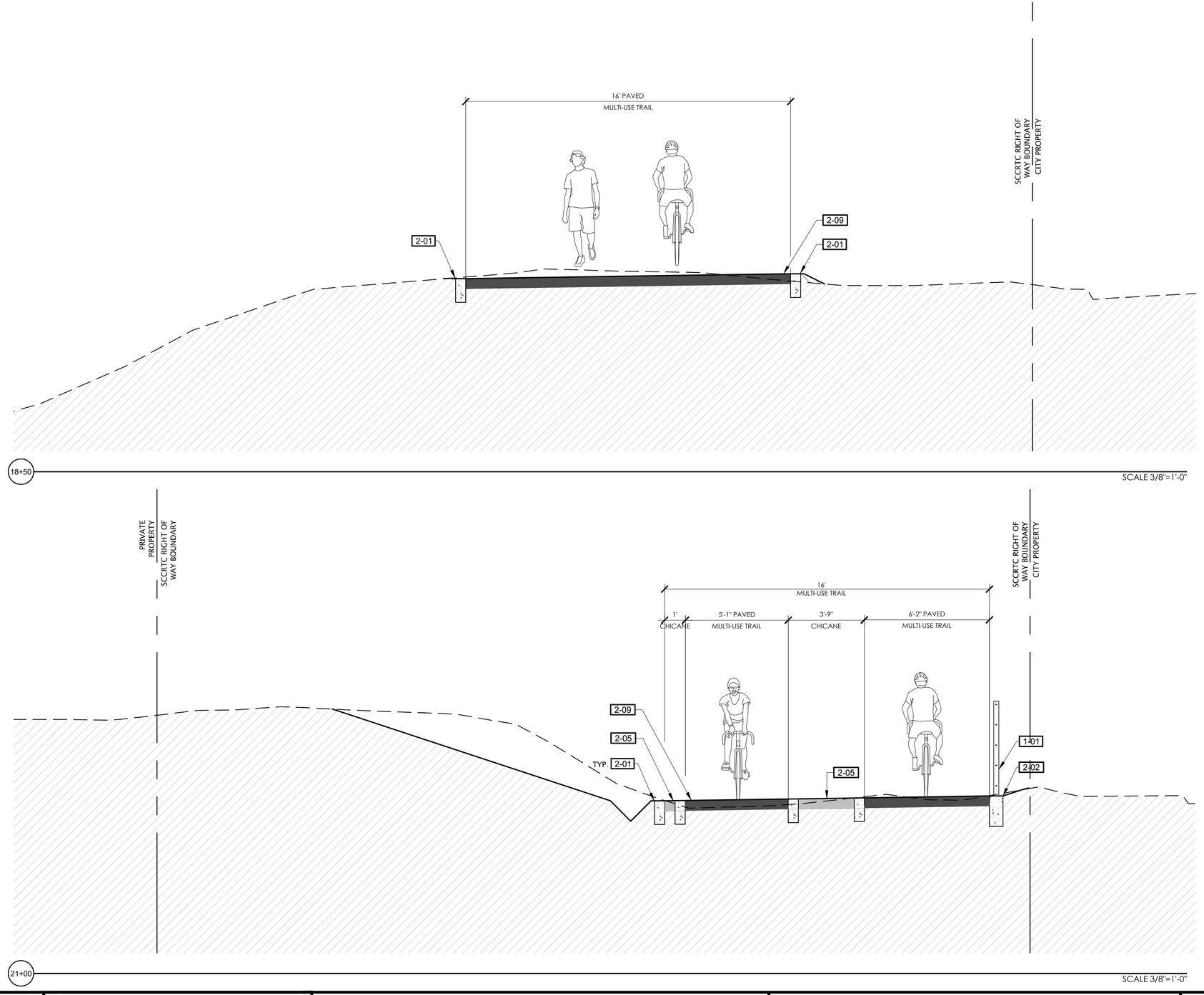
REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RBT-S9

DATE	07/22/2022
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CD-3.03
VAULT NO.

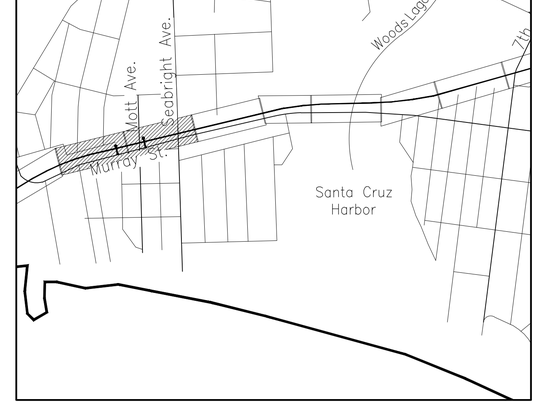
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

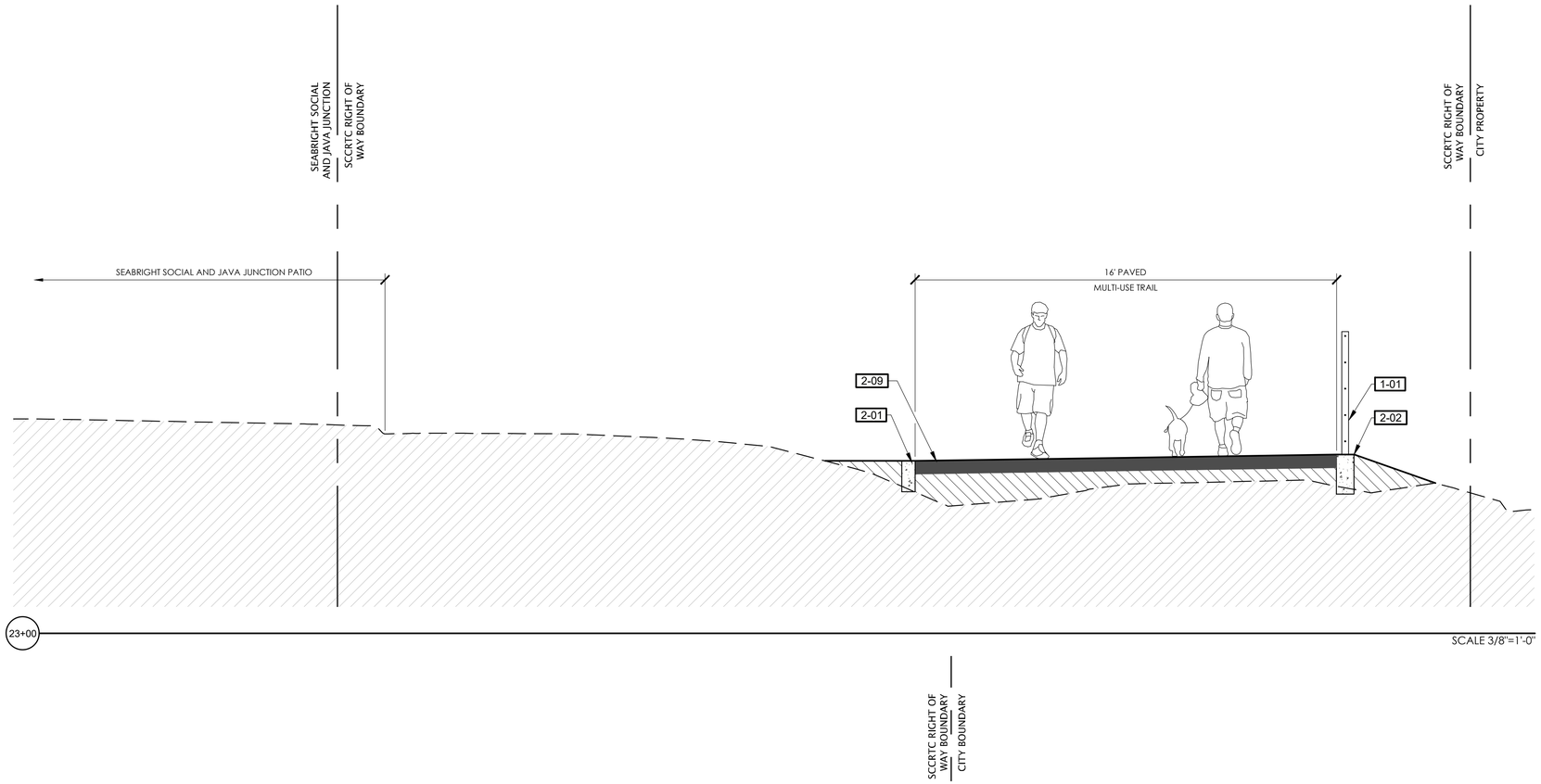
RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE	07/22/2022	SCALE AS SHOWN
	DRAWN	KS	CD-3.04
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

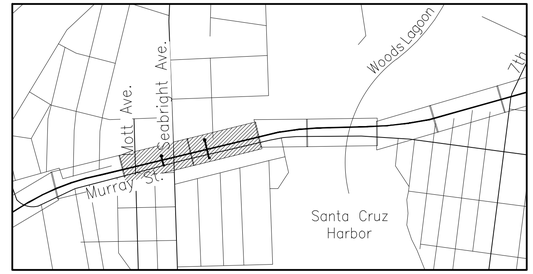
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
30332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES
FIELD BOOK:
DRAWING #: SEC-0193-04-RBT-S9

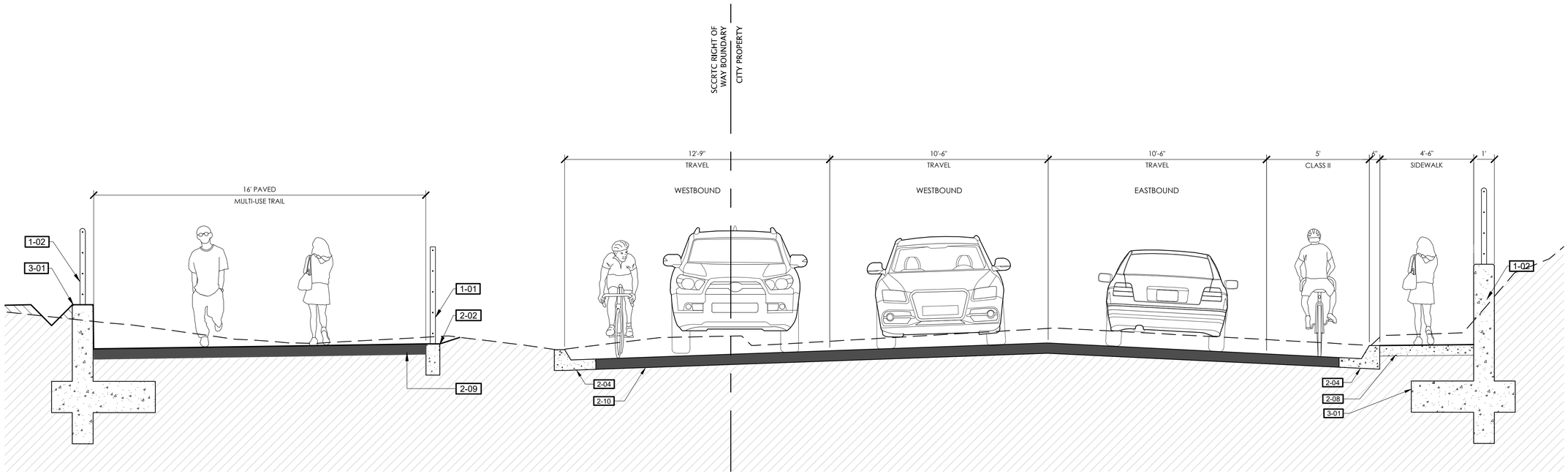
DATE	07/22/2022
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

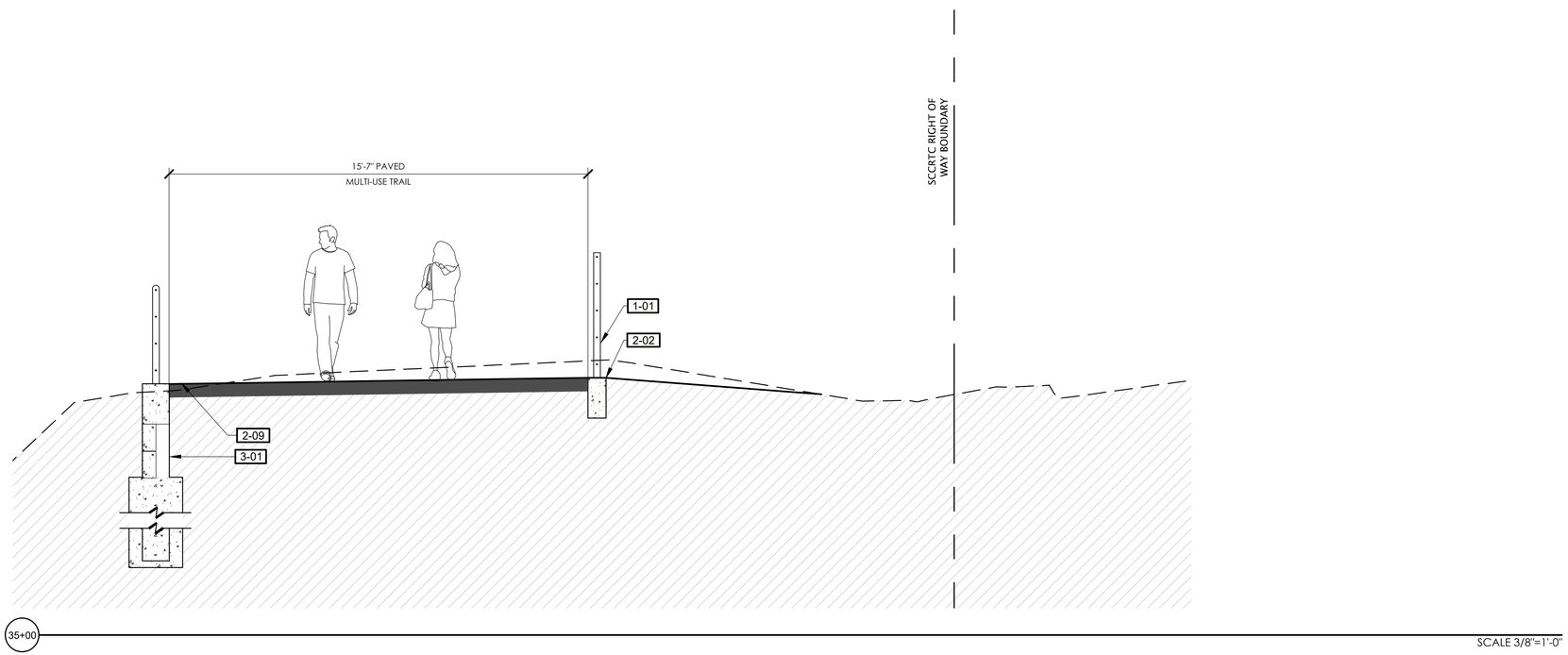
SCALE AS SHOWN
CD-3.05
VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CD-3.05, Images: , XREFs: XC-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XTB-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg, N:\2001\0193-04-Rail-Trail-Trail-Bridge\Landscape-Architecture\Trail-Bridge-Schematic Design\Street-Final\SEC-0193-04-RBT-S9.dwg, Plotted By: KMZoubeikis, Plotted: Jul 22, 2022 - 5:19pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

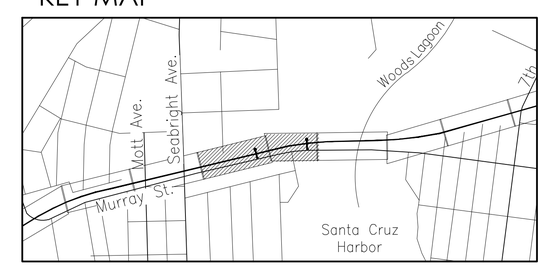




REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

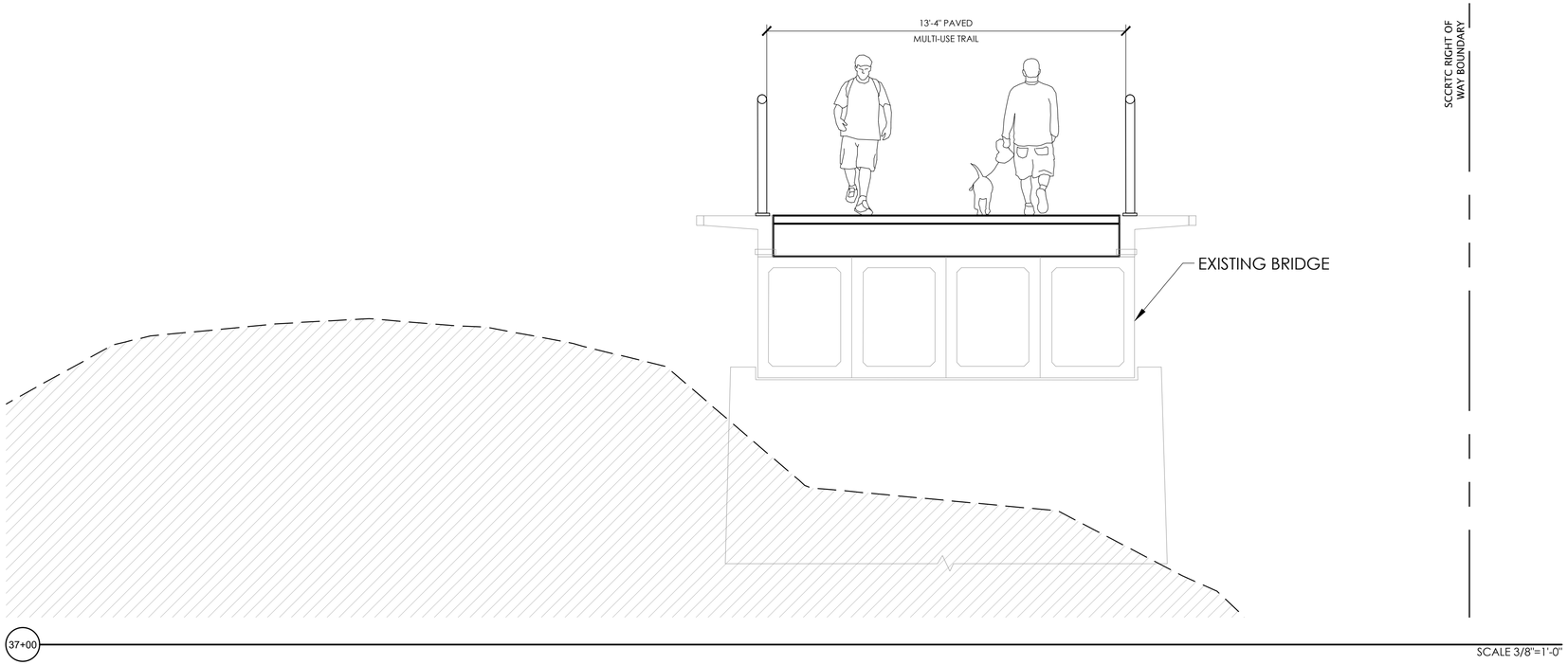
TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES	DATE	07/22/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN	KS	CD-3.06
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

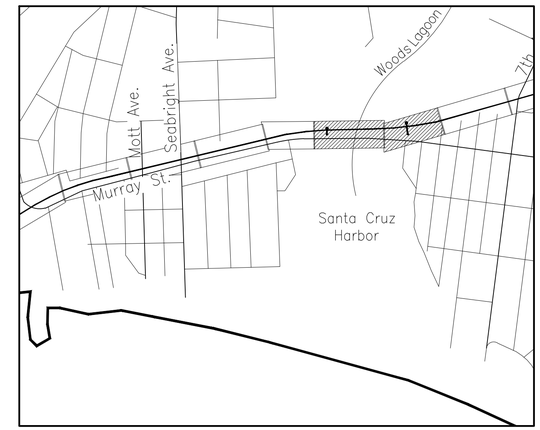
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

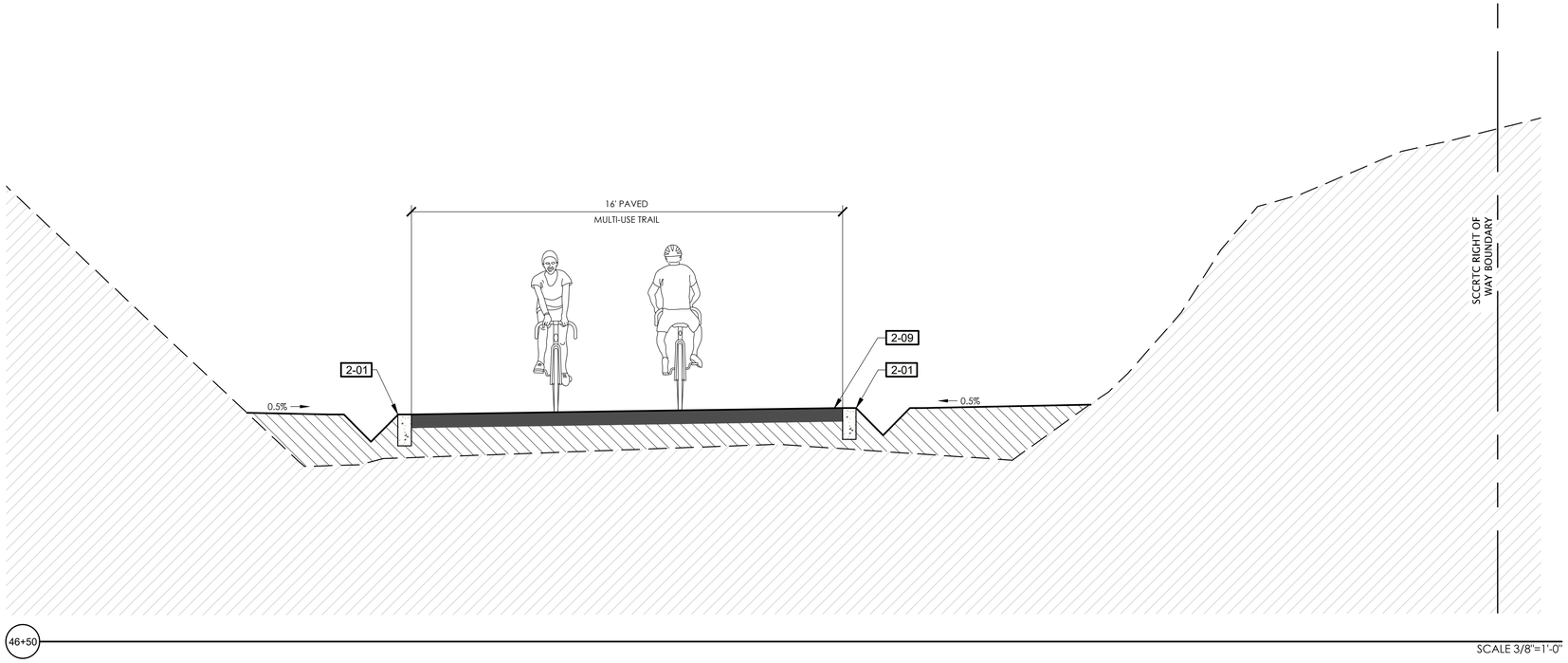
RAIL TRAIL SEGMENTS 8 & 9

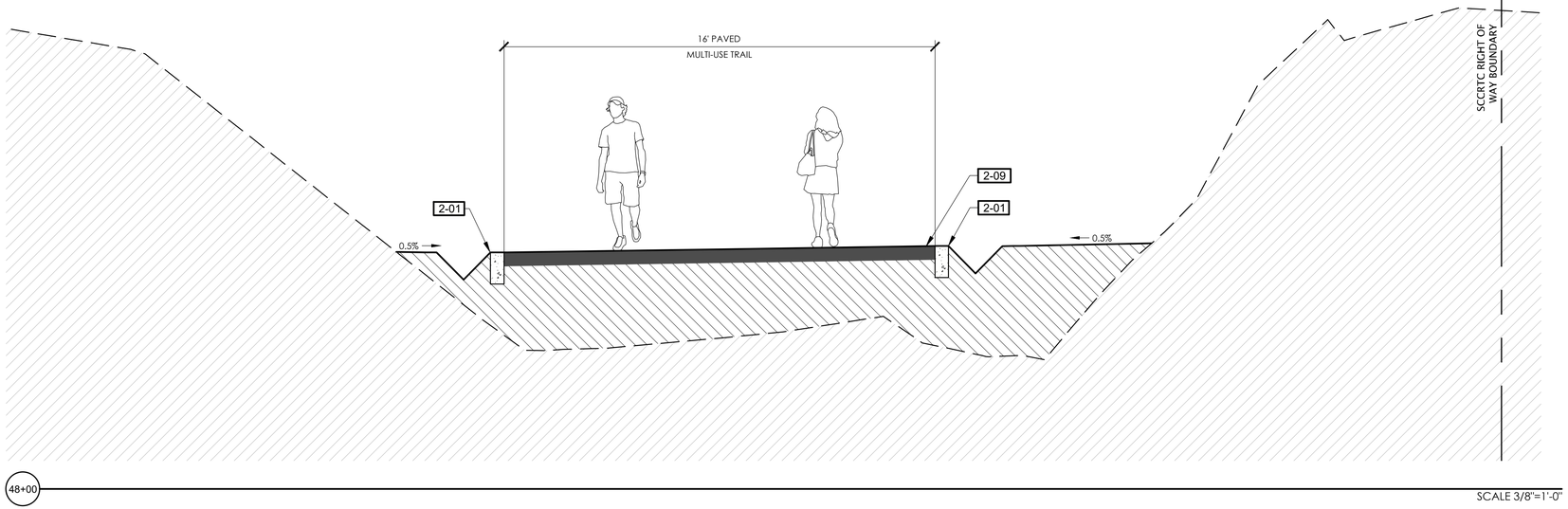
TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE	07/22/2022	SCALE AS SHOWN
	DRAWN	KS	CD-3.07
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

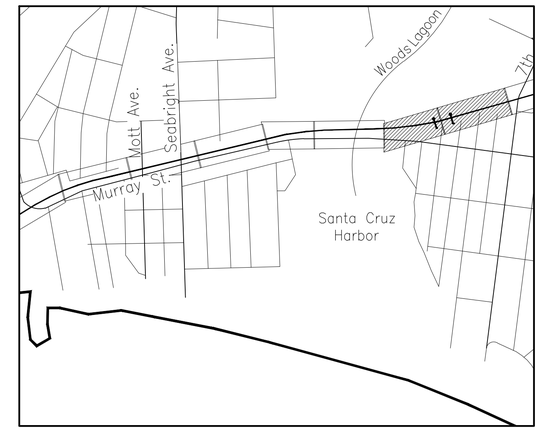




REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

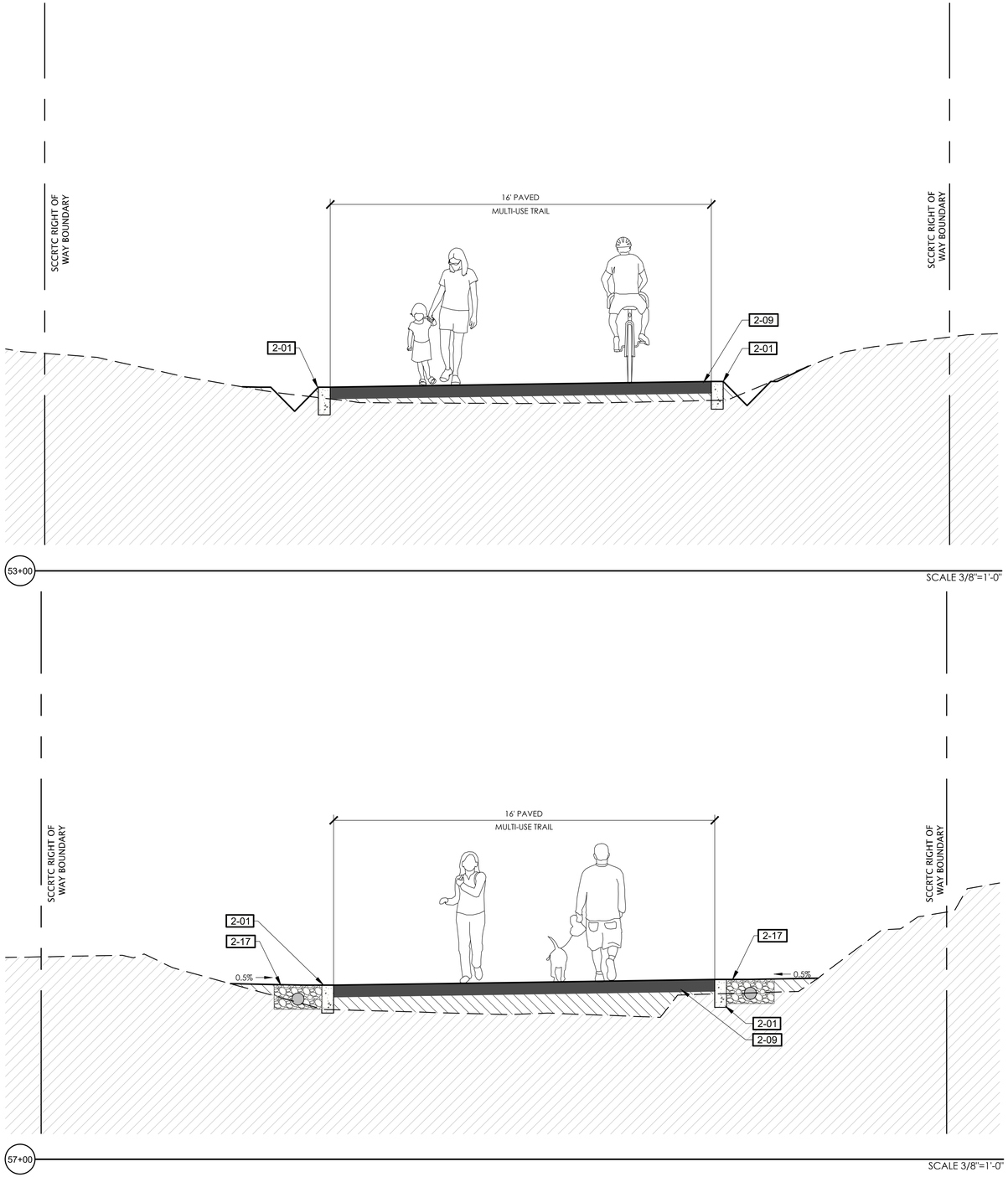
RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES	DATE	07/22/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN	KS	CD-3.08
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

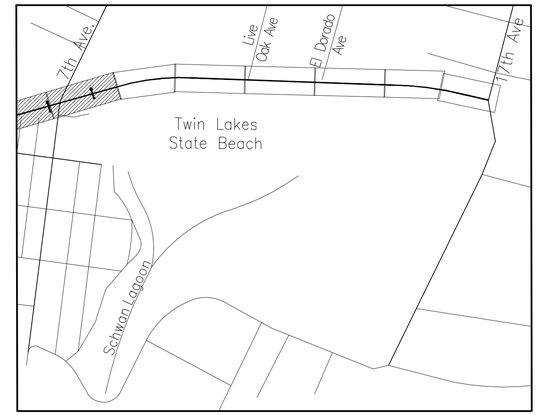
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

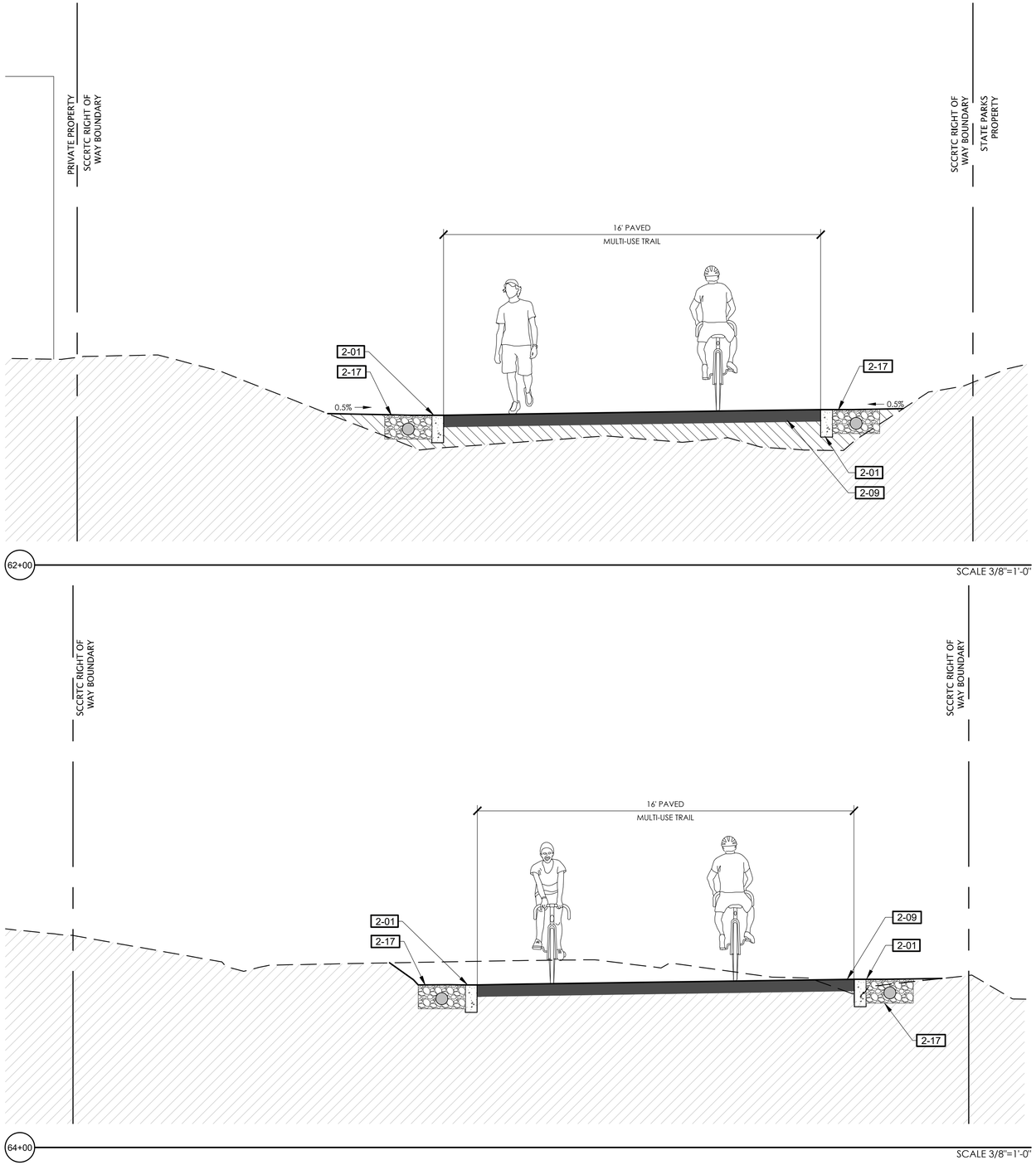
RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE	07/22/2022	SCALE AS SHOWN
	DRAWN	KS	CD-3.09
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

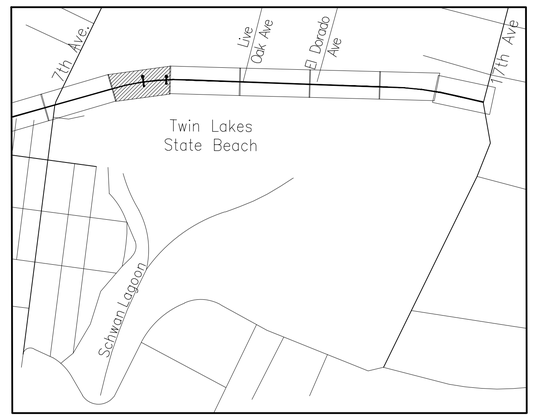
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

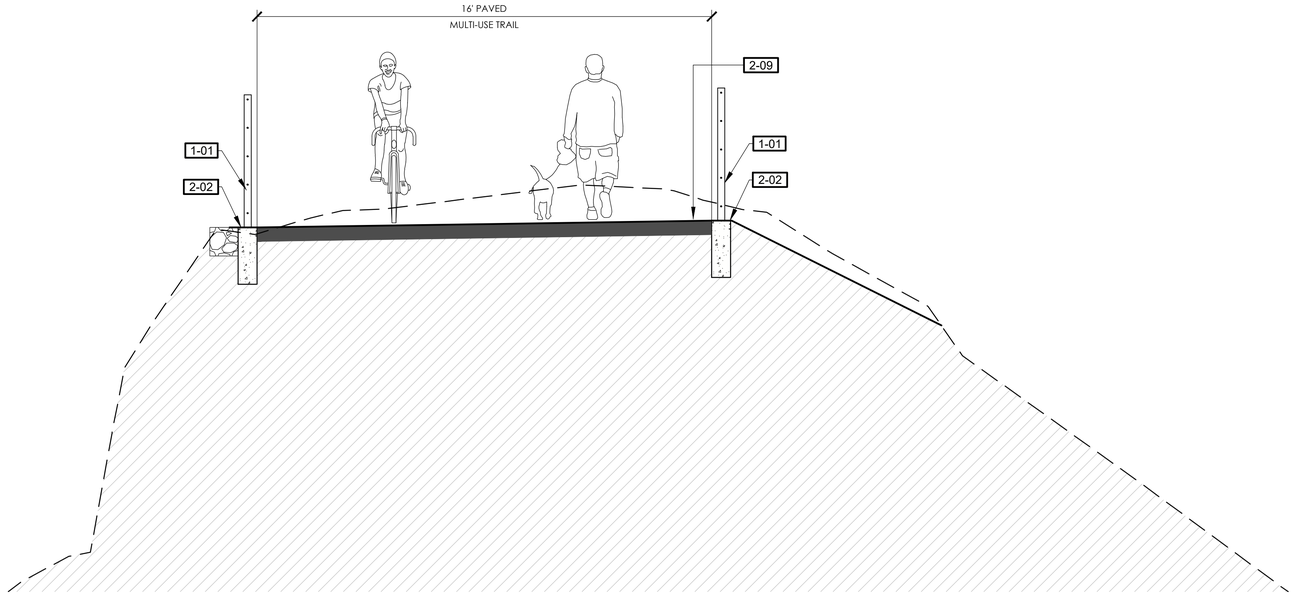
RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE	07/22/2022	SCALE AS SHOWN
	DRAWN	KS	CD-3.10
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



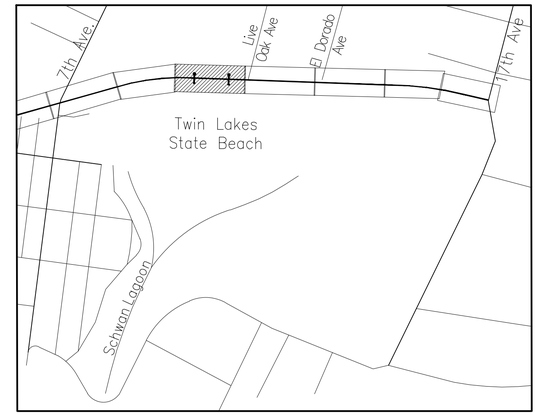
66+00

SCALE 3/8"=1'-0"

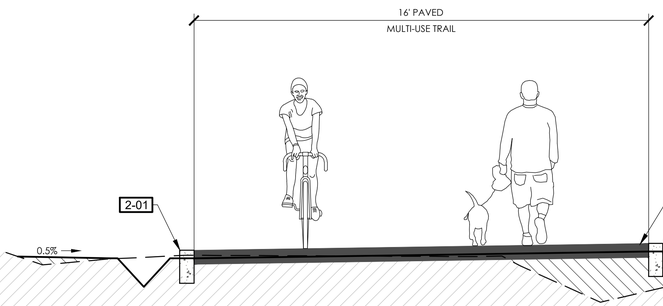
REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



SCCRTC RIGHT OF WAY BOUNDARY



SCCRTC RIGHT OF WAY BOUNDARY

69+00

SCALE 3/8"=1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

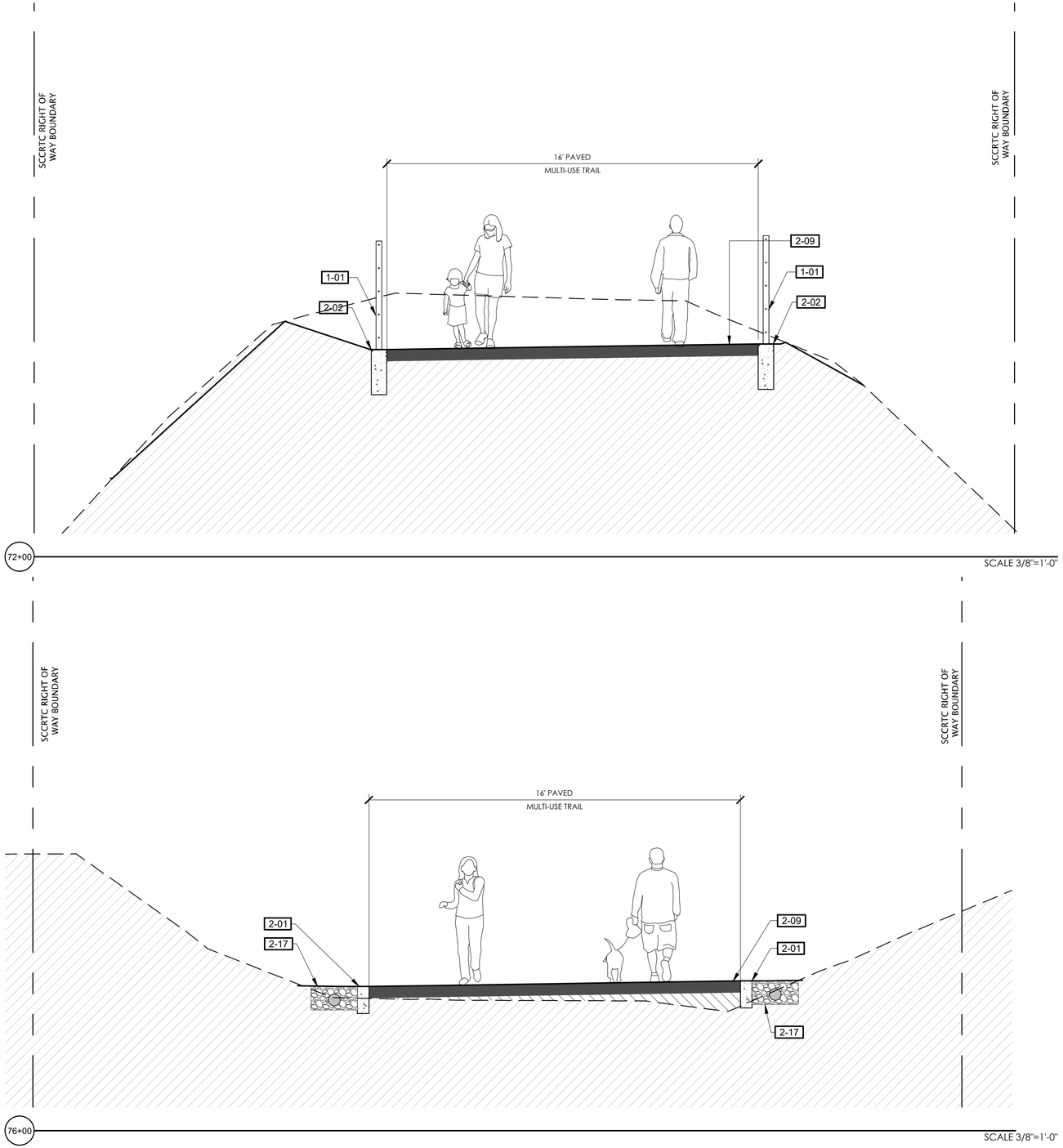
TRAIL SECTIONS

REFERENCES	DATE	07/22/2022	SCALE AS SHOWN
FIELD BOOK:	DRAWN	KS	
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: SEC-0193-04-RBT-S9.dwg Xrefs: SEC-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XTB-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg N:\2021\0193-04-RCTD-Santa-Cruz-Rail-Trail-B-R\Working with Trail\Landscape-Architecture\Plan-B-Schematic Design\Sheet-Files\SEC-0193-04-RBT-S9.dwg, Plotted By: KMGubelmai, Plotted: Jul 22, 2022 - 5:19pm

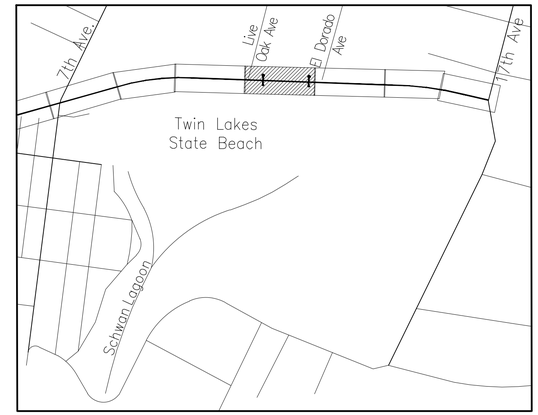
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

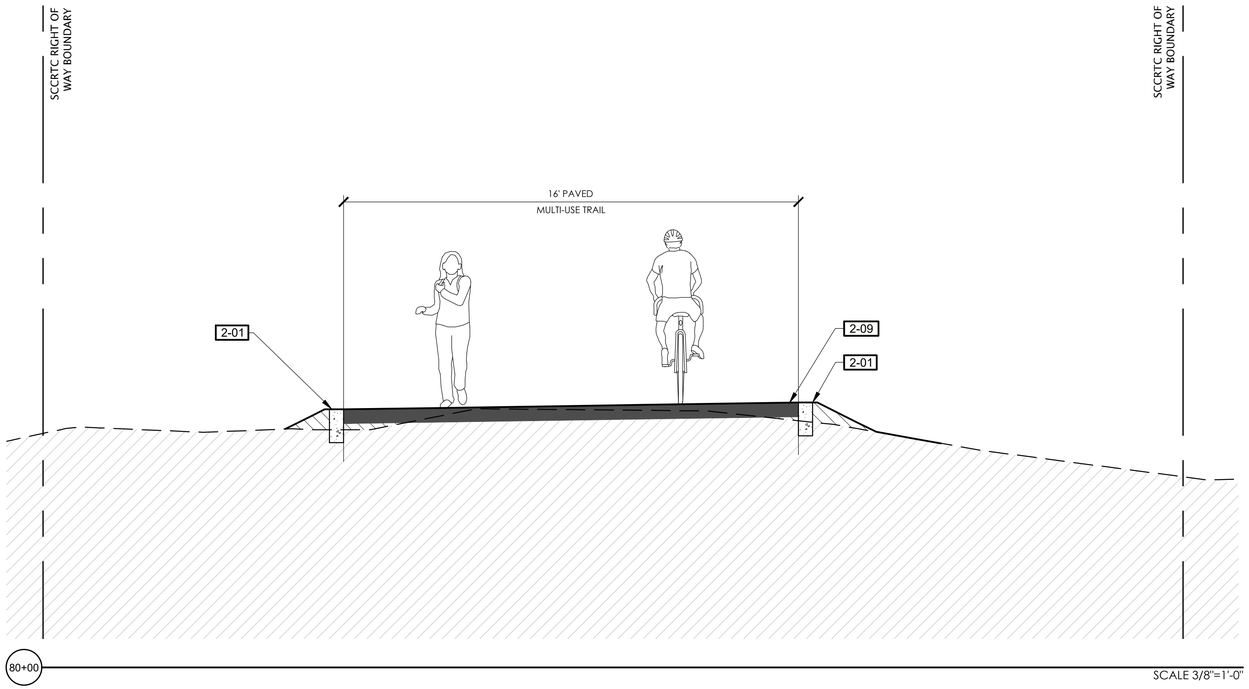
RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES			
FIELD BOOK:	DATE	07/22/2022	SCALE AS SHOWN
	DRAWN	KS	CD-3.12
DRAWING #: SEC-0193-04-RBT-S9	DESIGN	KS/MS	VAULT NO.
	CHECKED	MS	

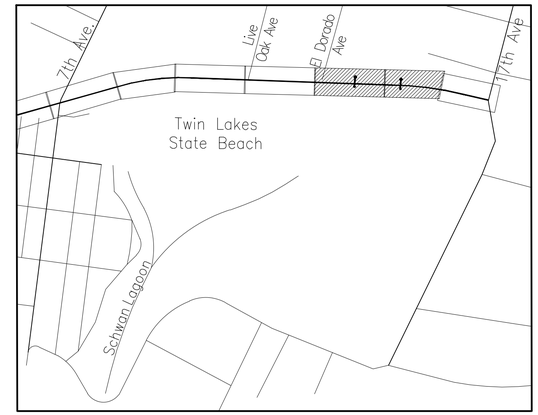
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RBT-S9

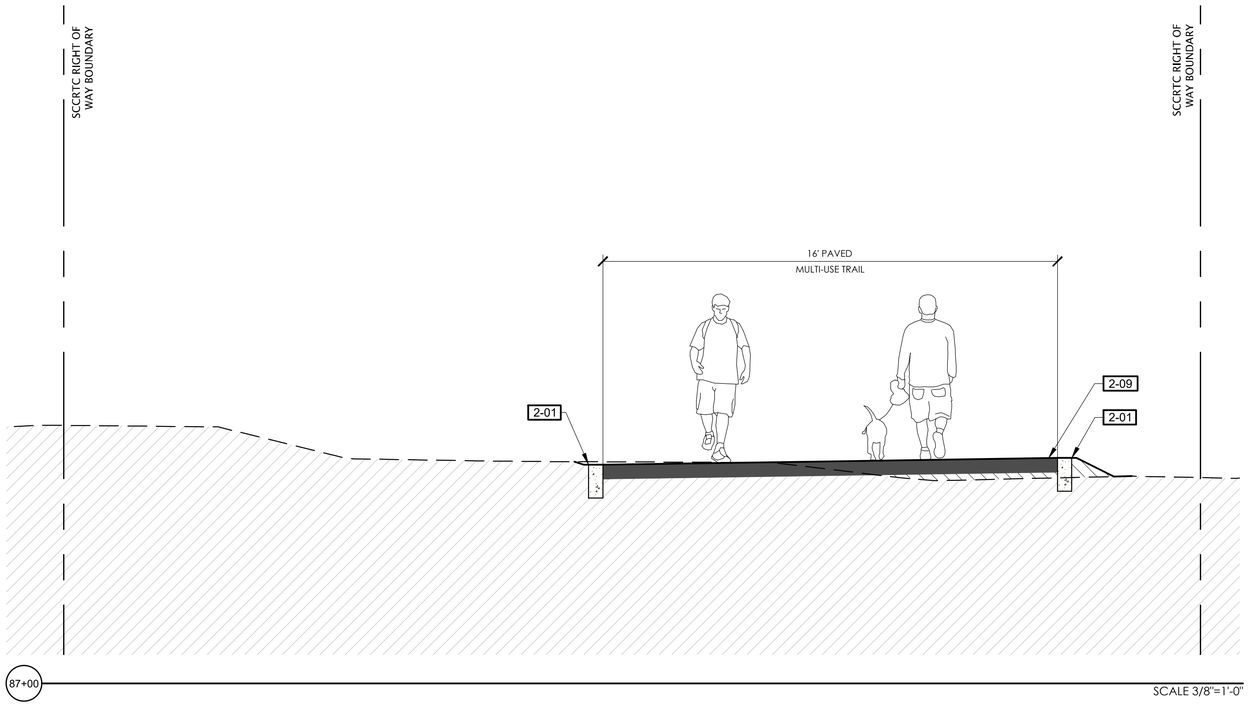
DATE	07/22/2022
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CD-3.13
VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: CD-3.13, Images: Xrefs: SEC-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XTB-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg, N:\005\0193-04-RC19-Santa-Cruz-Rail-Trail-B-A\Working with Trail\Landscape-Architecture\Trail-B-Schematic Design\Sheet-Files\SEC-0193-04-RBT-S9.dwg, Plotted By: KMGubelmai, Plotted: Jul 22, 2022 - 5:19pm

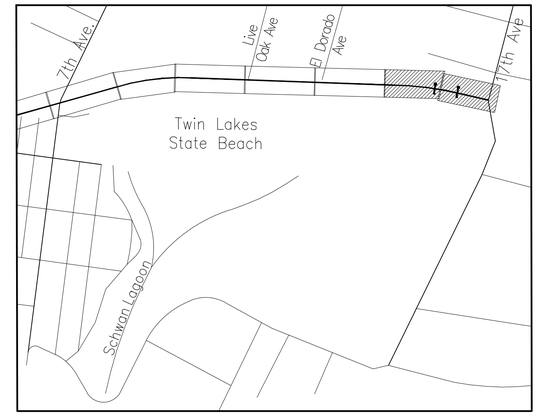
DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
1-01	SEPARATION FENCE
1-02	GUARDRAIL SYSTEM
1-05	BENCH
2-01	6" CURB
2-02	8" CURB
2-03	12" CURB
2-04	6" CURB AND GUTTER
2-05	CHICANE
2-08	CONCRETE SIDEWALK
2-09	HMA PAVEMENT (TRAIL)
2-10	HMA PAVEMENT (ROAD)
2-17	FRENCH DRAIN
3-01	RETAINING WALL, SEE WD SHEETS FOR WALL DETAILS

KEY MAP



PRELIMINARY NOT FOR CONSTRUCTION

rrm design group
rrmdesign.com | (949) 361-7950
32332 Camino Capistrano, Ste. 205
San Juan Capistrano, CA 92675

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

TRAIL ON THE RAIL LINE (INTERIM TRAIL)

TRAIL SECTIONS

REFERENCES
FIELD BOOK:

DRAWING #:
SEC-0193-04-RBT-S9

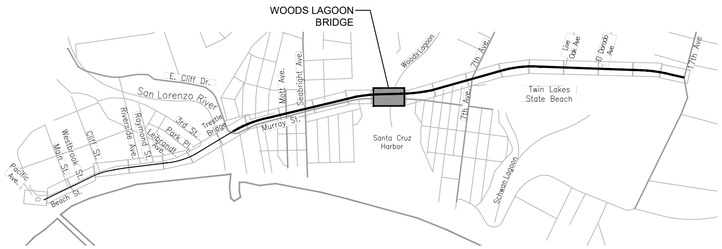
DATE	07/22/2022
DRAWN	KS
DESIGN	KS/MS
CHECKED	MS

SCALE AS SHOWN
CD-3.14
VAULT NO.

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

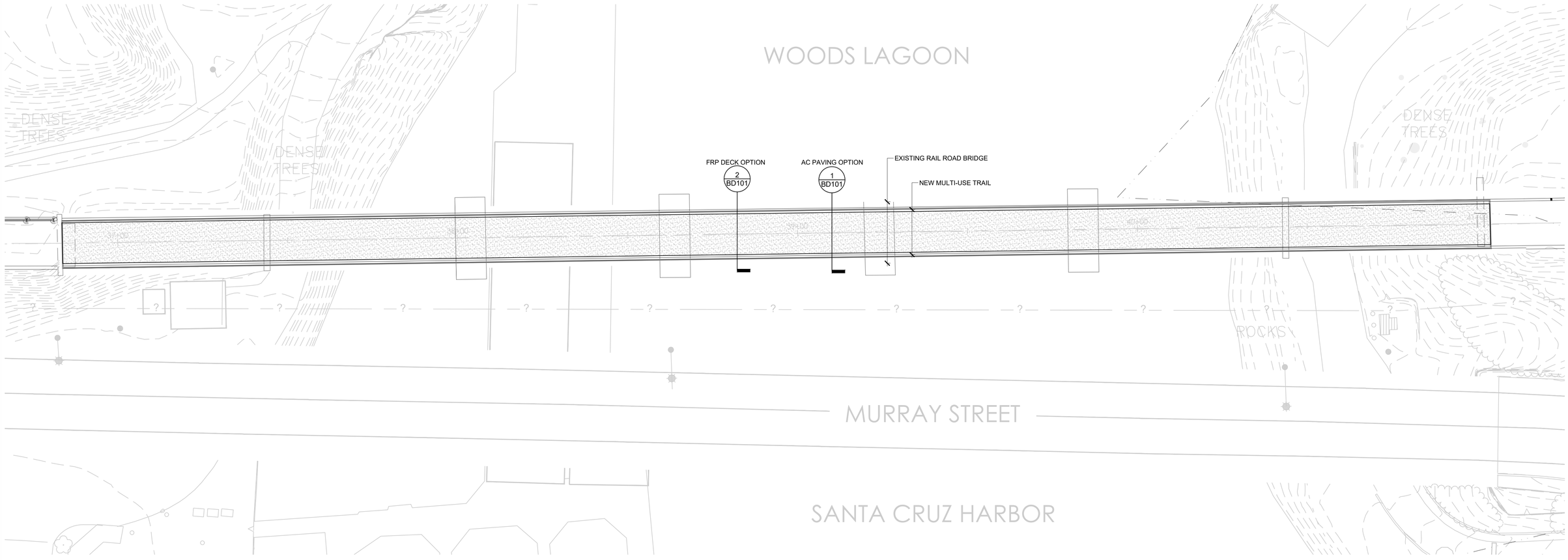
Layout Tab Name: CD-3.14, Images: Xrefs: SC-0193-04-RBT-S9.dwg, XSB-0193-04-RBT-S9.dwg, XTB-0193-04-RBT-S9.dwg, XT-0193-04-RBT-S9.dwg, N:\000\0193-04-RCTD-Santa-Cruz-Rail-Trail-B-A\Working with Trail\Landscape-Architecture\Trail-B-Schematic Design\Sheet-Files\SEC-0193-04-RBT-S9.dwg, Plotted By: KMGubelmai, Plotted: Jul 22, 2022 - 5:00pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS
BEFORE YOU DIG



STRUCTURAL KEY MAP

SCALE: NTS



WOODS LAGOON BRIDGE

SCALE: 1" = 20'

20' 0 10' 20' 40'
1" = 20'

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

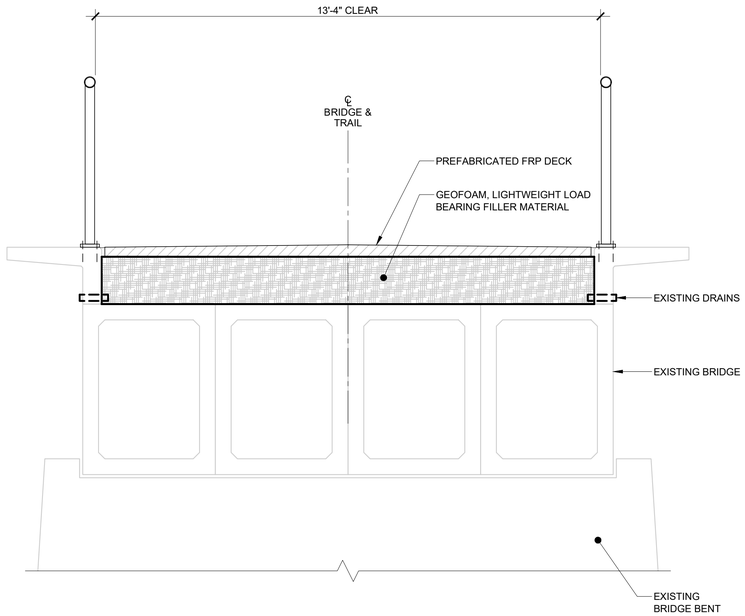
TRAIL ON THE RAIL LINE (INTERIM TRAIL)

WOODS LAGOON BRIDGE

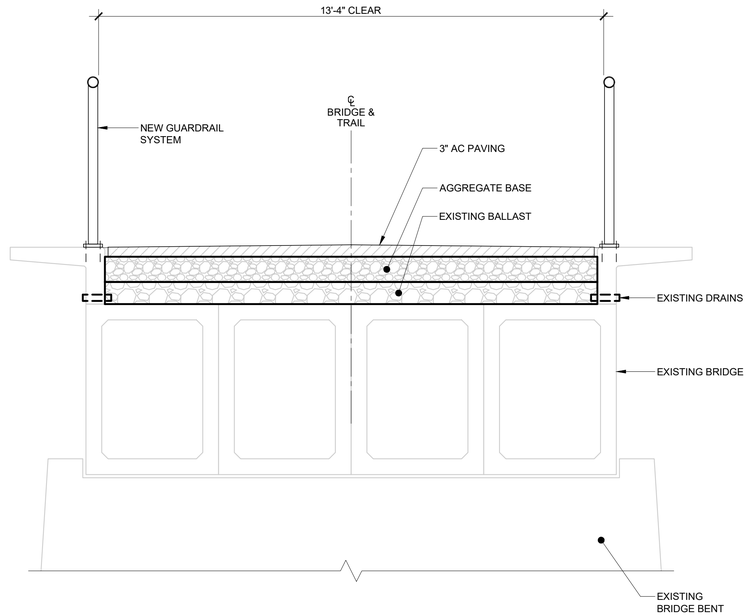
REFERENCES			
FIELD BOOK:	DATE 07/22/22	SCALE AS SHOWN	
	DRAWN EDD	BP-1.01	
DRAWING #:	DESIGN	VAULT NO.	
	CHECKED		

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



FRP DECK OPTION 2
SCALE: 1/2" = 1'-0"



AC PAVING OPTION 1
SCALE: 1/2" = 1'-0"

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-m-e.com

REVISIONS

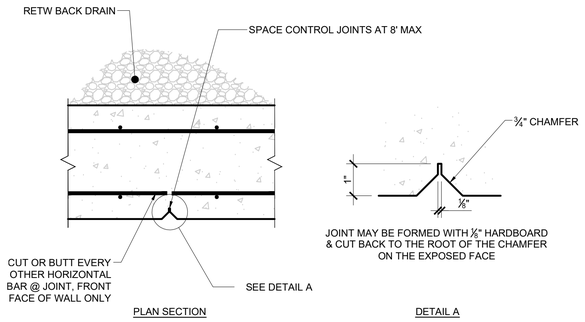
CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9
TRAIL ON THE RAIL LINE (INTERIM TRAIL)
WOODS LAGOON BRIDGE

REFERENCES	DATE 07/22/22	SCALE AS SHOWN
FIELD BOOK:	DRAWN EDD	BD-1.01
DRAWING #:	DESIGN	VAULT NO.
	CHECKED	

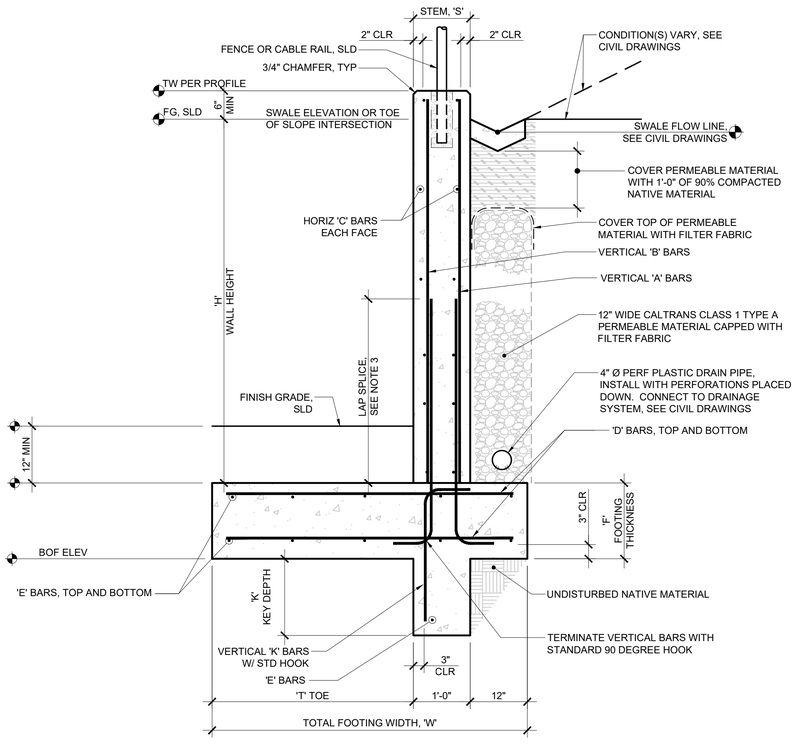
Layout Tab Name: BD-1.01, Images: MME small square logo.jpg; , Xrefs: xr-1b_ABT.dwg
L:\19165 RRM - Santa Cruz Rail Trail Segments 8 and 9\Dwg\SHT 002 BD 101 Woods Lagoon Bridge Details.dwg, Plotted By: eppic, Plotted Jul 22, 2022 - 4:29pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG

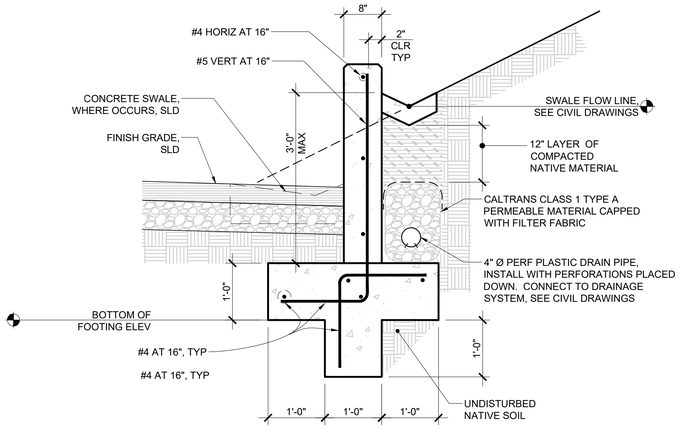


VERTICAL CONTROL JOINT 4
SCALE: 1 1/2" = 1'-0"

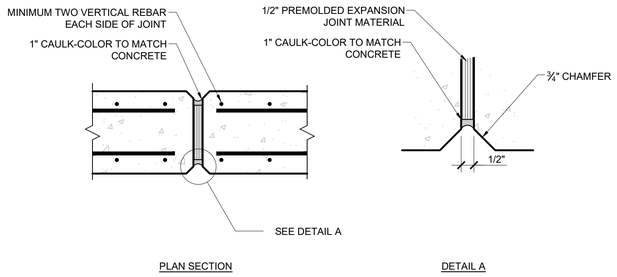
NOTES
1. STRUCTURAL BACKFILL SHALL NOT BE PLACED UNTIL THE CONCRETE HAS DEVELOPED A STRENGTH OF NOT LESS THAN 2500 POUNDS PER SQUARE INCH IN COMPRESSION, OR UNTIL THE CONCRETE HAS BEEN IN PLACE FOR 14 DAYS, WHICHEVER OCCURS FIRST.
2. THE BOTTOM OF FOOTING EXCAVATIONS SHALL BE FIRM, CLEAN AND FREE OF ANY LOOSE OR YIELDING SOILS. FOOTINGS SHALL BE POURED IN NEAT EXCAVATIONS WITHOUT THE USE OF SIDE FORMS. CAST TOE/KEY CONCRETE AGAINST UNDISTURBED NATIVE MATERIAL OR PREPARED SUBGRADE EXCEPT AS APPROVED BY THE GEOTECHNICAL ENGINEER.
3. AT THEIR OPTION, THE CONTRACTOR IS PERMITTED TO USE CONTINUOUS VERTICAL BARS FROM FOUNDATION TO TOP OF WALL. WHERE FOOTING DOWELS ARE USED, ALL VERTICAL BARS SHALL BE LAP SPLICED AND FOOTING DOWELS SHALL BE OF THE SAME SIZE AND SPACING AS BARS ABOVE.
4. MINIMUM FOOTING EMBEDMENT SHALL BE MEASURED FROM THE LOWEST EXISTING ADJACENT SOIL GRADE.



CONCRETE RETAINING WALL TYPICAL CROSS SECTION (H > 3') 3
SCALE: 3/4" = 1'-0"

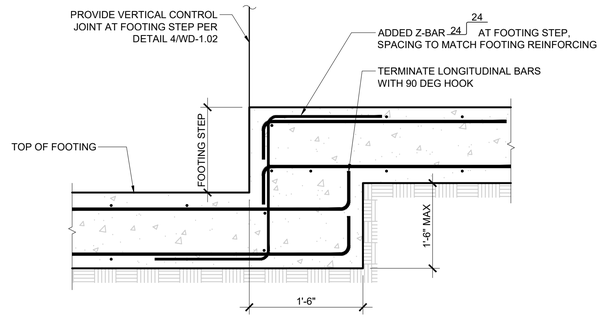


CONCRETE RETAINING WALL TYPICAL CROSS SECTION (H < 3') 1
SCALE: 3/4" = 1'-0"



NOTE: JOINT IS CONTINUOUS FROM TOP OF WALL TO BOTTOM OF FOOTING. CAULK MAY BE OMITTED AT FOOTING

VERTICAL EXPANSION JOINT 5
SCALE: 1 1/2" = 1'-0"



STEPPED WALL FOOTING 2
SCALE: NOT TO SCALE

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

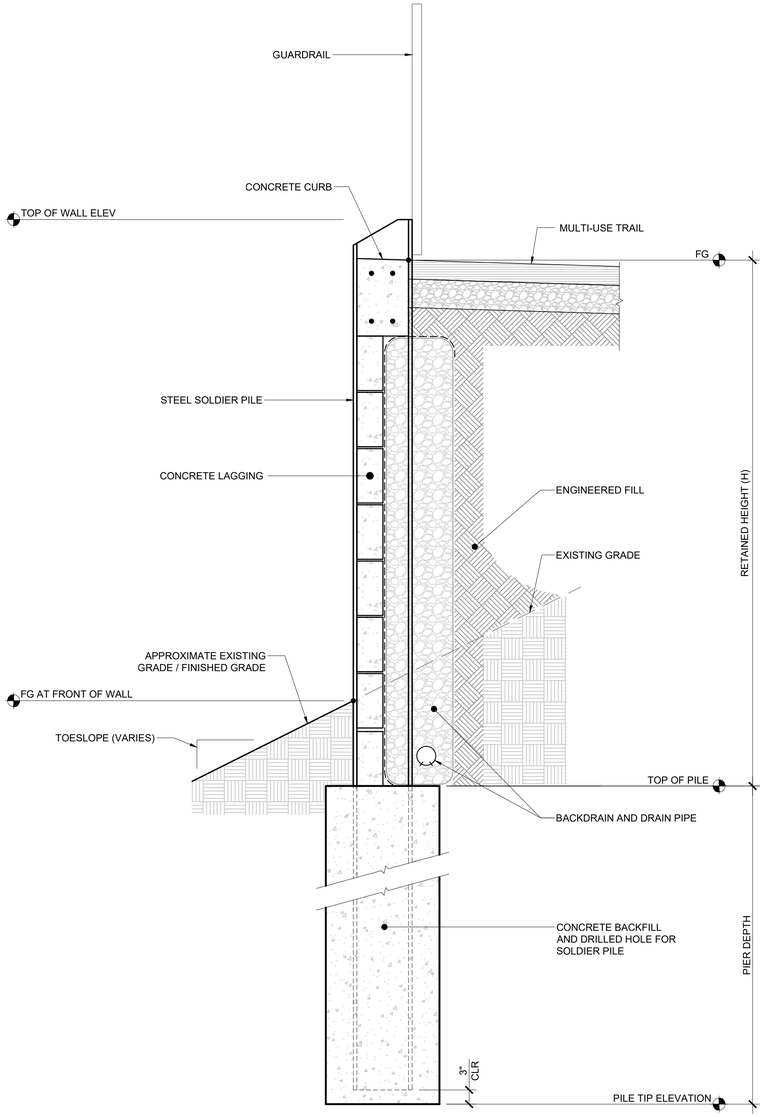
RAIL TRAIL SEGMENTS 8 & 9
TRAIL ON THE RAIL LINE (INTERIM TRAIL)
RETAINING WALL DETAIL SHEET

REFERENCES	DATE 07/22/22	SCALE AS SHOWN
FIELD BOOK:	DRAWN EDD	WD-1.01
DRAWING #:	DESIGN	VAULT NO.
	CHECKED	

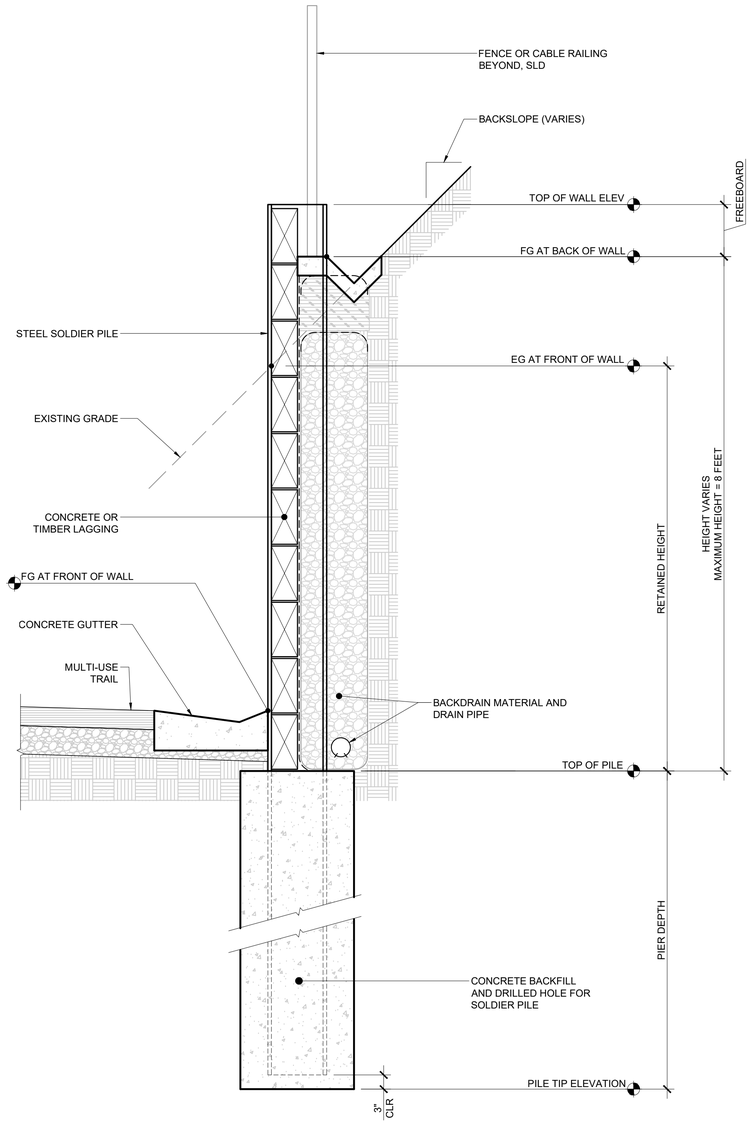
TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: WD-1.01, Images: MME small square logo.jpg; , Xrefs: x:~7B_ABS.dwg (\\191k6 #dwg ~ Santa Cruz Rail Trail Segments 8 and 9\Jeng\DBT 003 WD 101 Retaining Wall Details.dwg, Plotted By: eligar, Plotted on: 23, 2022 - 4:29pm

DIG ALERT
DIAL TOLL FREE
811
AT LEAST 2 DAYS BEFORE YOU DIG



CONDITION 2
RET WALL W/ TRAFFIC SURCHARGE (2)
SCALE: 3/4" = 1'-0"



CONDITION 1
RET WALL WITH BACKSLOPE (1)
SCALE: 3/4" = 1'-0"

PRELIMINARY NOT FOR CONSTRUCTION

MME
CIVIL + STRUCTURAL ENGINEERING
224 Walnut Avenue · Suite B · Santa Cruz, CA · 95060
831.426.3186 · www.m-me.com

REVISIONS

CITY OF SANTA CRUZ
PUBLIC WORKS DEPARTMENT
809 Center Street, Room 201
Santa Cruz, CA 95060

RAIL TRAIL SEGMENTS 8 & 9

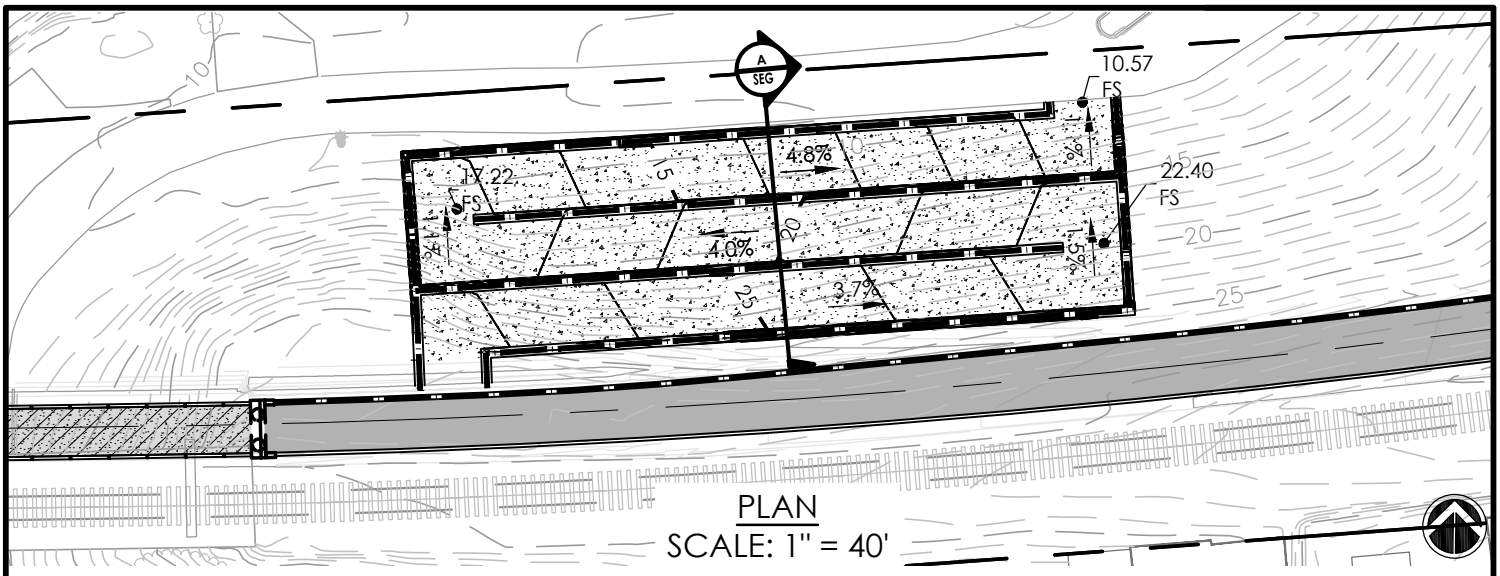
TRAIL ON THE RAIL LINE (INTERIM TRAIL)

RETAINING WALL DETAIL SHEET

REFERENCES	DATE 07/22/22	SCALE AS SHOWN	
FIELD BOOK:	DRAWN EDD	WD-1.02	
DRAWING #:	DESIGN	VAULT NO.	
	CHECKED		

TRAIL ON THE RAIL LINE (INTERIM TRAIL) FINAL SCHEMATIC PLANS - 07/22/2022

Layout Tab Name: WD-1.02, Images: MME_small square logo.jpg - Xrefs: XC-0193-04-RWT-59.dwg, XC-0193-04-RWT-59.dwg, SEC-0193-04-RWT-39.dwg, x-TB_REF.dwg
I:\191\8 RWay - Santa Cruz Rail Trail Segments 8 and 9\dwg\REF DOCS WD 102 Retaining Wall Details Soldier Pile.dwg, Plotted By: wgilpin, Plotted: Jul 22, 2022 - 4:29pm



PLAN
SCALE: 1" = 40'

TREES TO BE REMOVED
15 TREES

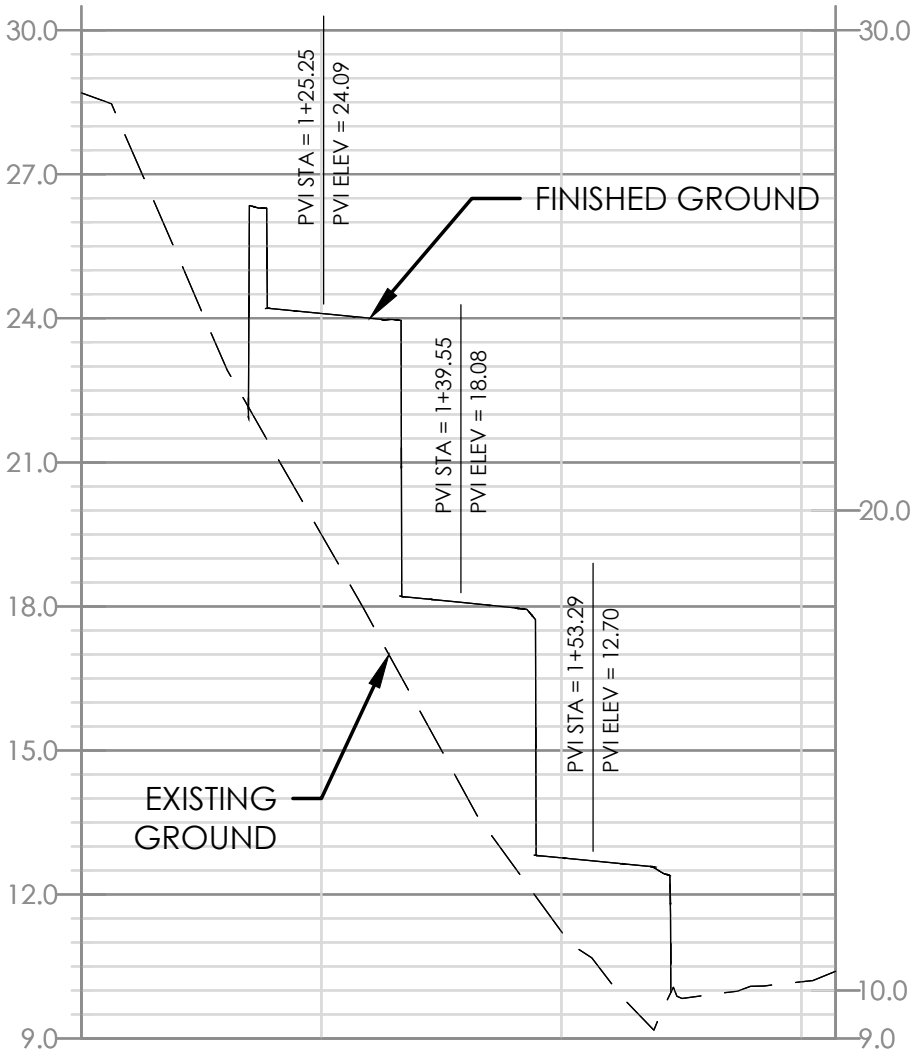
EARTH WORK ANALYSIS

CUT = 46.02 CU YD
FILL = 758.99 CD YD
NET = 712.97 CD YD

1" = 40' SCALE
0 40 80 Feet

1" = 20' SCALE
0 20 40 Feet

1" = 4' SCALE
0 4 8 Feet



SECTION A
HORIZONTAL SCALE 1" = 4'
VERTICAL SCALE 1" = 20'

	RAIL TRAIL SEGMENT 9	7/5/2022
rrm design group	ULTIMATE TRAIL CONFIGURATION EAST HARBOR CONNECTION EXHIBIT	

Appendix B.

Notice of Preparation (NOP) and NOP Comments

- Notice of Preparation
- Table B-1. Summary of NOP Comments
- Table B-2. NOP Comments Submitted on City of Santa Cruz Website
- Letters Received
- Emails Received

This page intentionally left blank.

ZONING / PERMIT PROCESSING
831/420-5100 • FAX 831/420-5434
COMPREHENSIVE PLANNING
831/420-5180 • FAX 831/420-5101

CITY OF SANTA CRUZ

INSPECTION SERVICES
831/420-5120 • FAX 831/420-5434
PLANNING ADMINISTRATION
831/420-5110 • FAX 831/420-5101

PLANNING AND COMMUNITY DEVELOPMENT DEPARTMENT
809 Center Street • Room 206 • Santa Cruz, CA 95060 • www.cityofsantacruz.com
Lee Butler, Director

September 14, 2021

NOTICE OF PREPARATION OF AN EIR AND SCOPING MEETING

RE: Rail Trail Segments 8 and 9 Project

To Interested Agencies and Persons:

The City of Santa Cruz, as the lead agency, is preparing an Environmental Impact Report (EIR) and hosting a public scoping meeting on the project described herein. Please respond with written comments regarding the scope and the content of the EIR as it may relate to your agency's area of statutory responsibility or your areas of concern or expertise. Your agency will need to use the EIR prepared by our agency when considering your permit or other approval for the project, if any is required.

The focus of this notice and the scoping meeting is specifically to gather input on potential environmental issues and project alternatives to be evaluated in the environmental review process, not the merits of the project itself or the project design. There will be future opportunities for community input on the schematic plans.

Responses are due within 30 days of the receipt of this Notice, as provided by State law, and thus should be received no later than ***Friday, October 15, 2021, 4:00 PM***. The contact person's name and address are listed below. Please include the commenter's name, agency or organization (if applicable), phone number, and email (typed or written legibly) in your response.

City of Santa Cruz CEQA Project Webpage
www.cityofsantacruz.com/railtrail89
or
Nathan Nguyen, P.E., Project Manager
City of Santa Cruz Public Works Department,
809 Center Street, Room 201, Santa Cruz, CA 95060
nnguyen@citysantacruz.com

If emailing, to ensure receipt of your comment/question, please use the following **subject line: "RAIL TRAIL 8/9"**

1. Project Location and Description

The **Rail Trail Segments 8 and 9 Project** is a 2.2-mile bicycle and pedestrian system that extends along the Santa Cruz Branch Rail Line (SCBRL) corridor, from the Beach Street/Pacific Avenue Roundabout on the west to the eastern side of 17th Avenue on the east, excluding the recently constructed San Lorenzo River Trestle Bridge Improvements (**Figure 1**).

Segment 8 (0.6 mile) is comprised of a Class IV on street bicycle system and pedestrian sidewalk improvements. Segment 9 (1.6 miles) is comprised of a multi-use bicycle and pedestrian trail. The Project purpose is to provide an accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the existing rail corridor, consistent with the MBSST Network Master Plan.

The project is part of the larger Monterey Bay Sanctuary Scenic Trail (MBSST) Network, for which a Master Plan was adopted and a programmatic EIR was certified in 2013 by the Santa Cruz County Regional Transportation Commission (RTC). In 2014, the RTC made minor revisions to the Master Plan and prepared an EIR addendum. The Master Plan was prepared to establish a continuous alignment, including a bicycle and pedestrian trail along the RTC-owned SCBRL, for the length of Santa Cruz County. Information from the Master Plan EIR will be used where appropriate in this EIR for Segments 8 and 9.

The EIR for Segments 8 and 9 will evaluate the proposed project, called *Rail with Trail*, as well as a *Railbank with Trail* alternative, at an equal level of detail. When an alternative is evaluated at an equal level of detail, CEQA requires that the lead agency identify a preferred alternative. The City considers the proposed project, *Rail with Trail*, the preferred alternative for purposes of environmental review.

- **Proposed Project: Rail with Trail.** The multi-use trail would be located on the inland side of the railroad tracks. For Segment 8, between the Roundabout and the existing ramp to the San Lorenzo River Trestle Trail, the Project generally includes improvements to the existing Class IV Cycle Track for bicycles and sidewalk for pedestrians that extend along Beach Street, adjacent to the Santa Cruz Beach Boardwalk amusement park. The remaining portion of Segment 8 along the San Lorenzo River Trestle Bridge was constructed in 2019, is 10-feet-wide, and requires no improvements.

  For Segment 9, from the east side of the San Lorenzo River Trestle Bridge to the east side of 17th Avenue, the trail would be 10-12 feet wide (but may be reduced to 8 feet in areas with existing constrained conditions) and would continue to be on the inland side of the tracks, with safety fencing between the trail and the tracks.

- **Alternative 1: Railbank with Trail.** The Segment 8 portion of the trail, from the Beach Street/Pacific Avenue Roundabout to across the San Lorenzo River Trestle Bridge, would be the same as described above for the proposed project.

  For Segment 9, from the east side of the San Lorenzo Trestle Bridge to the east side of 17th Avenue, the multi-use trail would be located generally along the rail centerline, and the existing tracks and ties would be removed to enable construction of the trail. The trail width would be determined during preliminary design, with the goal of reducing significant project effects in accordance with CEQA Guidelines (Sec 15126.6).

As required by CEQA, the City will also consider other project alternatives, which must meet most of the project objectives while substantially lessening or avoiding any of the significant impacts of the proposed project. As part of this scoping process, the City is soliciting input from agencies and the public on additional alternatives that should be considered for evaluation within the alternatives section of the EIR. Comments regarding suggested alternatives should include a clear description in narrative and graphic formats to the extent possible. Comments on this subject will be most helpful if they include the author's thoughts regarding how well they might meet the requirements of CEQA.

2. Project Applicant

Nathan Nguyen, P.E., Project Manager
City of Santa Cruz Public Works Department,
809 Center Street, Room 201, Santa Cruz, CA 95060
(831) 420-5188, nnguyen@cityofsantacruz.com

3. Probable Environmental Effects of the Project.

Although, at this very early stage of the environmental review process, it is impossible to know with certainty the precise nature and extent of the environmental effects that will be identified as preparation of the Draft EIR gets underway, it is possible to identify key categories of environmental effects that the proposed project will implicate. These include Aesthetics, Air Quality, Biological Resources, Cultural Resources, Geology/Soils, Greenhouse Gas Emissions/Climate Change, Hazards and Hazardous Materials, Hydrology and Water Quality, Land Use and Planning, Noise, Recreation, Transportation/Circulation, and Tribal Cultural Resources.

4. Scoping Meeting

Pursuant to the public participation goals of CEQA, as set forth in particular in Public Resources Code section 21083.9, subdivision (a), the City will host an EIR Scoping Meeting at the date, time and location indicated below to gather additional input on the scope of the EIR analysis.

Wednesday, October 6, 2021
5:00-6:30 PM

Zoom Webinar Link: https://rrmdesign.zoom.us/j/87554617851
Zoom Webinar ID: 875 5461 7851
Call-in Options via Telephone: +1 669 900 6833 or +1 408 638 0968

5. Contact Person Name and Phone Number:

Nathan Nguyen, P.E., Project Manager
City of Santa Cruz Public Works Department
809 Center Street, Room 201, Santa Cruz, CA 95060
(831) 420-5188, nnguyen@cityofsantacruz.com

Figure 1. Rail Trail Segments 8 and 9 Project Location Map

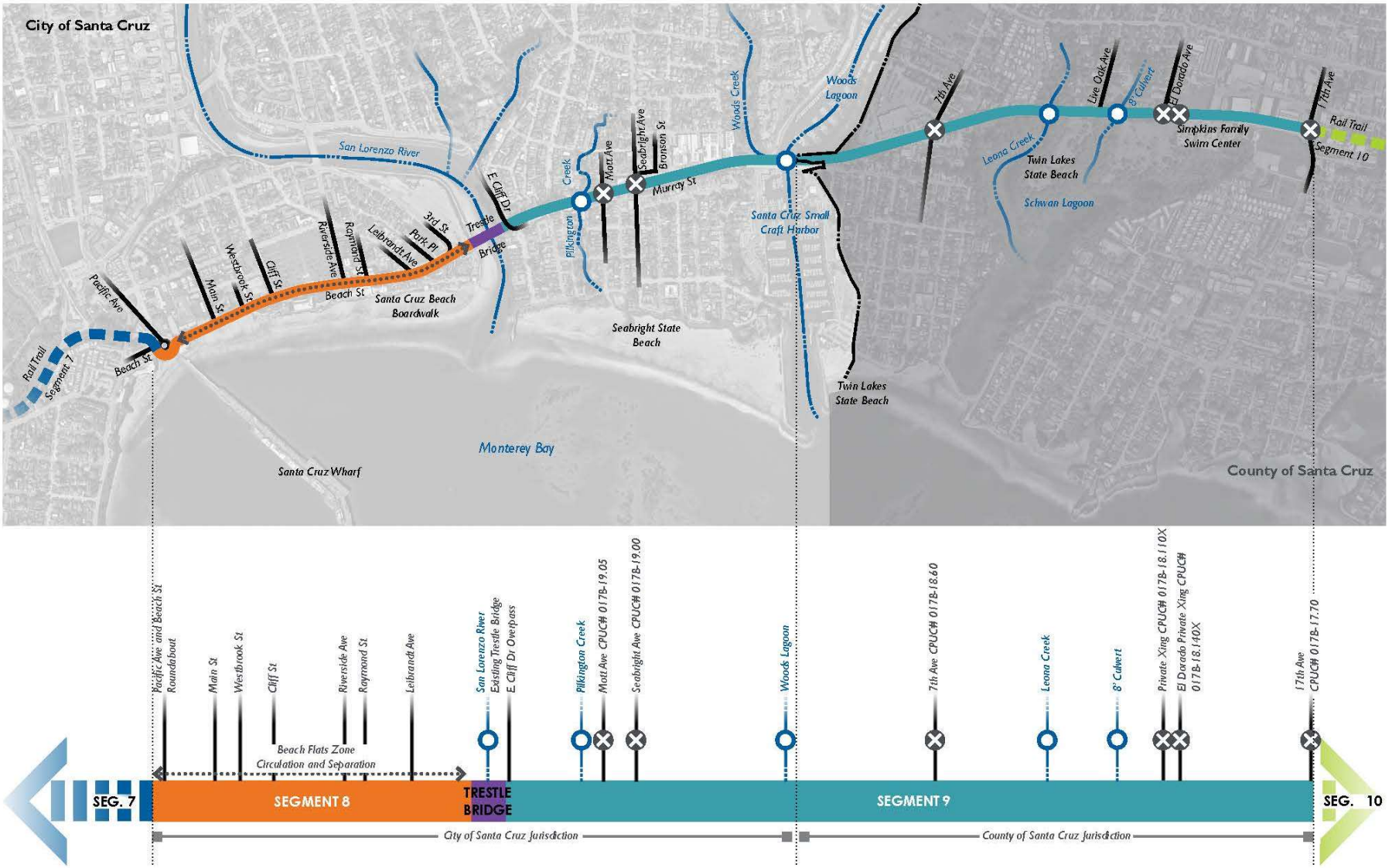


Table B-1. Summary of Notice of Preparation Comments Received for Coastal Rail Trail Segments 8 and 9

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
Agencies			
California Coastal Commission (Rainey Graeven)	10/15/2021 Letter	The corridor should be used to its full sustainable transportation potential. Accordingly, the evaluation of railbanking or similar alternatives should document potential impacts to the long-term development of complete multimodal transit options.	Comment noted regarding use of the corridor. Chapters 3, *Environmental Impact Analysis*, Section 3.12, *Transportation*.
		The Draft Environmental Impact Report (DEIR) will need to evaluate in detail how the "Railbank with Trail" alternative will affect the feasibility of reintroducing rail along this corridor at a future date, so that reviewers can better understand the implications of the decisions being made now.	Evaluating the feasibility of reintroducing rail is outside the scope of this EIR, which focuses on the physical environmental impacts. Chapter 2, *Project Description,* Section 2.6.2, includes a description of the timing.
		Clearly describe "railbanking," including scenarios that may trigger future trail relocation to accommodate rail/transit use and the various steps required and an explanation of the legal requirements from the Surface Transportation Board.	Railbanking is described in Chapter 1, *Introduction*. The description of the optional Interim Trail in Chapter 2, *Project Description*, describes the three parts of (1) rail removal and Interim Trail construction, (2) Interim Trail removal and rail construction, and (3) trail construction alongside the rail.
		Alternatives that should be evaluated include both a rail-and-trail option or a trail along with another type of transit option (e.g., a dedicated trolley or bus lanes) or a trail-alone option.	Rail with trail is evaluated in Chapter 3, *Environmental Impact Analysis*. Trail along with other type of transit is considered in Chapter 5, *Project Alternatives*.
		The DEIR alternatives analysis should allow for easy comparisons in trail utility, opportunities, and status of project timing.	Project timing for the Project, with and without the Interim Trail, is described in Chapter 2, *Project Description*, Section 2.6.2. Chapter 5, *Project Alternatives*, provides a comparison of the environmental impacts.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
		The DEIR should identify the preferred alternative that is most protective of coastal resources; complies with other Coastal Act policies, such as minimizing vehicle miles traveled; and provides for a continuous, safe, and scenic trail system. Any overwater crossing should also make use of appropriate bridge coloration and railing design to minimize impacts to public views and the character of the area; employ appropriate best management practices (BMPs) during construction, including to protect water quality and sensitive marine and terrestrial/avian species; and consider potential tsunami events.	Chapter 5, *Project Alternatives*, identifies an environmentally superior alternative taking all environmental topics into consideration and describes the rationale. Chapter 2, *Project Description*, includes a description of water crossings in Section 2.4 and construction BMPs in Section 2.6.
		Recommend analyzing range of alternatives between San Lorenzo River Trestle Bridge and Segment 9 to ensure seamless connectivity and improve pedestrian, bike, and vehicular traffic.	The Project provides seamless connectivity between the San Lorenzo River Trestle Bridge and Segment 9. Also refer to Chapter 5, *Project Alternatives*, for the range of alternatives considered.
		The EIR should evaluate alternatives for safe crossings at roadways, and alternatives fronting the Santa Cruz Beach Boardwalk (Boardwalk) to improve demarcations, facilitate access, and improve trail user experience and safety, including grading/structurally separating the trail.	Chapter 5, *Project Alternatives*.
		Identify improvements to Segment 8 to address pedestrian, bike, and traffic congestion at the Boardwalk.	Chapter 2, *Project Description*, Section 2.4.
		The DEIR needs to evaluate the Project against the applicable Local Coastal Program and Coastal Act standards. Coastal Development Permit applications that span the California Coastal Commission Coastal Development Permit jurisdiction and that of local government can be consolidated.	Comment noted. The City and County will be working with the California Coastal Commission to obtain required permits. Also refer to Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*, and Section 3.9, *Land Use and Planning*.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
		Portions of the Project along Beach Street in the City of Santa Cruz and some portions of the Project in the County's jurisdiction are also subject to the public access and recreation policies of the Coastal Act because they are located along the first through public road inland from the ocean.	Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*, and Section 3.9, *Land Use and Planning*.
		The Project will nevertheless have the potential to result in habitat impacts, primarily because the Project would be adjacent to and cross over a number of creeks, lagoons, and tidally influenced waters.	Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.
		The DEIR should clarify the status of the Murray Street Bridge Replacement Project, including its timing and whether it intends to preserve the existing, although limited, pedestrian sidewalk and bicycle path on the seaward side of the harbor bridge, and if the Project would widen the bridge and provide for exclusive bicycle and pedestrian access.	Chapter 4, *Other CEQA Required Discussions*, Table 4-1.
California Department of Fish and Wildlife (Stephanie Fong)	10/18/2021 Letter	The DEIR should include reasonably foreseeable future phases of the Project and sufficient information to evaluate and review the Project's environmental impact: -Footprint of permanent project features -Type of trail base (asphalt, concrete, gravel, or dirt) -New light sources along trail -Location, type, length, and height of fencing -Habitat encroachment caused by widening trail	Chapter 2, *Project Description*, and Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.
		Habitat descriptions and species profiles should include information from multiple sources: aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, and findings from "positive occurrence" databases such as California Natural Diversity Database.	Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.
		The DEIR should discuss all direct and indirect impacts (temporary and permanent) including "take" of special species, loss of habitat, permanent and temporary habitat disturbances, and obstruction of wildlife corridor use.	Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
		The DEIR should specify proposed fencing plans and identify current wildlife trails throughout the Project area to install wildlife friendly fencing at these locations that make it easier for wildlife species to traverse, to decrease wildlife entanglement and mortality. (See A Landowner's Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind).	Chapter 2, *Project Description*, and Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.
		Map areas with creeks, drainages, culverts and where there is potential for concentrated runoff to occur. Incorporate permeable surfaces throughout the Project to allow stormwater to percolate in the ground and prevent stream hydromodification (see link on page 5).	Chapter 2, *Project Description*, and Chapter 3, *Environmental Impact Analysis,* Sections 3.3, *Biological Resources,* and 3.8, *Hydrology and Water Quality*.
		Eliminate non-essential artificial lighting. A void or limit the use of artificial lights during the hours of dawn and dusk, when many wildlife species are most active. California Department of Fish and Wildlife also recommends that outdoor lighting be shielded, cast downward, and not spill over onto other properties or upwards into the night sky (see the International Dark-Sky Association standards).	Chapter 2, *Project Description*, and Chapter 3, *Environmental Impact Analysis,* Sections 3.1, *Aesthetics*, and 3.3, and *Biological Resources*.
Santa Cruz County Regional Transportation Commission (Guy Preston)	10/15/2021 Letter	Supports environmental review of alternative alignments.	Comment noted. Refer to Chapter 2, *Project Description*, Section 2.4, and Chapter 5, *Project Alternatives*.
California Public Utilities Commission (Eyitejumade 'Ade' Sogbesan)	9/30/2021 Letter	Add language that any future development adjacent to or near the railroad (right-of-way) is planned with the safety of the rail corridor in mind. The trail project may increase traffic volumes at highway-rail crossings and trail and bike intersections. This includes considering pedestrian circulation patterns or destinations with respect to railroad right-of-way and compliance with the Americans with Disabilities Act (ADA).	Chapter 3, *Environmental Impact Analysis,* Section 3.9, *Land Use and Planning,* describes adjacent land use and zoning designations, and Section 3.12, *Transportation*, addresses potential increase in traffic volumes. The trail would be designed in accordance with ADA requirements, as described in Chapter 2, *Project Description*.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
		Mitigation measures to consider include the planning for grade separations for major thoroughfares with no at-grade rail crossings because that configuration provides the most extensive safety considerations to the public, improvements to existing at-grade crossings due to increase in traffic volumes, and continuous vandal-resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad right-of-way.	Grade separations are addressed in Chapter 5, *Project Alternatives*, Section 5.1. Planned fencing is described in Chapter 2, *Project Description*, Section 2.4.
		Field diagnostic meetings are required at all impacted or potentially new crossings. The Field Diagnostic Team consists of staff and representatives from the City, California Public Utilities Commission, Santa Cruz County Regional Transportation Commission, or County of Santa Cruz, and other stakeholders. This review includes a detailed analysis of the crossing. During the field diagnostic review, the Field Diagnostic Team evaluates appropriate hazard elimination recommendations and determines whether the Project's development is feasible.	Comment noted.
California Department of Parks and Recreation (Linda Hitchcock)	9/27/2021 Website	Santa Cruz tarplant is in the meadow at Twin Lakes State Beach on the south side of rail line.	Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.
Individuals & Organizations			
Amelia Conlan	10/17/21 Email	In Segment 8, sidewalks need to be wider, bike and pedestrian areas should be clearly delineated, and the location of the bike lane and sidewalk should be swapped.	Comment noted. Also refer to Chapter 2, *Project Description*, Section 2.4.
Brian Peoples, Trail Now	09/15/2021 Email	Opposes elevated trail platform; platform not needed if railbank and construct Interim Trail. Will EIR suffice for rail and trail, as well as trail built on railbed?	Comment noted. Also refer to Chapter 1, *Introduction*, and Chapter 2, *Project Description*, Section 2.4.
	9/18/2021 Email	Boardwalk Trestle be part of Segment 9 and be included in the railbanking analysis.	Comment noted. Also refer to Chapter 5, *Project Alternatives*, Section 5.1.
Bryant Mairs	9/26/2021 Website	Supports rail with trail.	Comment noted.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
David Dean	10/6/2021 Website	Opposes railbank with trail.	Comment noted.
Faina Segal, Friends of Rail and Trail	10/14/2021 Letter	"Railbank with Trail" alternative should be renamed as "Railbank with INTERIM Trail" in the DEIR.	Chapter 2, *Project Description*.
		The DEIR should include full environmental impact of an interim trail, including demolition of the existing rail line, handling and disposal of hazardous waste, implementation of an interim trail, discontinuing the interim trail use, restoring the rail line, and constructing a permanent trail alongside the rail so that this alternative can be fully evaluated and understood by the community and decision makers.	Chapter 3, *Environmental Impact Analysis*.
		Evaluate impacts each alternative would have on greenhouse gas, climate change, circulation, and release/creation of hazardous materials.	Chapter 3, *Environmental Impact Analysis*, for the Project with and without the optional Interim Trail, and Chapter 5, *Project Alternatives*.
Gillian Greensite, Save Our Big Trees	10/15/2021 Website	Opposes tree removal.	Comment noted. Also refer to Chapter 3, *Environmental Impact Analysis,* Section 3.3, *Biological Resources*.
Jane Mio	10/15/21 Email	Mature trees provide wildlife habitat, shade, and sequestration. Protecting trees is part of City commitment in City planning documents and policies.	Comment noted. Also refer to Chapter 3, E*nvironmental Impact Analysis*, Section 3.3, *Biological Resources*.
Joe Ward	9/17/21 Website	The Project is a waste of money, and the website is biased.	Comment noted.
Joyce Nicolson	9/18/21 Website	Supports the Project.	Comment noted.
Kenneth Hake	9/27/2021 Website	Supports the Project.	Comment noted.
Kyle Kelley	10/6/2021 Website	Supports rail with trail.	Comment noted.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
Leonard Foreman	9/23/2021 Website	Supports Project as long as pedestrian and bicycle only.	Comment noted.
Linala Tauria	9/28/21 Website	Supports the Project.	Comment noted.
Mark Mesiti-Miller	10/6/2021 Website	Should rename "Railbank with Trail" to "Railbank with Interim Trail." The EIR should fully cover an Interim Trail. There is currently no policy adopted that supports railbanking.	The EIR fully covers the optional Interim Trail. Also refer to Chapter 2, *Project Description*.
Mary Alsip	9/20/21 Website	Supports the Project.	Comment noted.
Micah Posner, Sierra Club	10/15/2021 Letter	"Railbank with Trail" alternative should be renamed as "Railbank with INTERIM Trail" in the DEIR.	Chapter 2, *Project Description*.
		Evaluate long-term environmental impacts of halting rail transit.	Rail operation and service is outside the scope of this EIR, as described in Chapter 1, *Introduction*, Section 1.2.3, and Chapter 2, *Project Description*, Section 2.5.
		Evaluate impacts on coastal access and pedestrian/cyclist access at points along Segment 9.	Chapter 3, Environmental Impact Analysis, Sections 3.9, *Land Use and Planning*, and 3.12, *Transportation*.
Michael Pisano	10/1/21 Website	Questions regarding relocating the rail along Beach Street and finishing the Project by next year.	Relocating the rail is not part of the Project. Project timing is discussed in Chapter 2, *Project Description*, Section 2.6.
Nathaniel James	9/20/2021 Website	Supports railbanking alternative at the Boardwalk Trestle.	Comment noted. Also refer to Chapter 5, *Alternatives*, Section 5.1.
Neil Waldhauer	9/21/2021 Website	There should be an easy on/off ramp from trail at Simpkins Swim Center.	The Project includes three connections to Simpkins Swim Center. Refer to Chapter 2, *Project Description*, Section 2.4.1.
Paul Lockwood	9/23/2021 Website	Supports railbank with trail.	Comment noted.

Commenter	Date and Correspondence Type	Comment	Location of Topic in Environmental Impact Report (EIR) and/or General Response
Peter Stanger	10/15/21 Email	Agrees with Brian People's 9/15/22 email comments. Consider removing steel rails but leaving wooden ties, with three suggestions for remediation.	Comment noted. Also refer to responses to Brian People's email above.
Ruby Domino	9/21/21 Website	Interested in the trail.	Comment noted.
Wayne Fenton	9/27/2021 Website	Supports rail with trail.	Comment noted.
Will Fourt	9/15/21 Website	Is the EIR covering both the portion in the City limits and the unincorporated County?	Yes.
Willie Case	10/4/21 Website	Questions regarding Segment 8 design.	Chapter 2, *Project Description*, Section 2.4, and Appendix A, *Project Design Plans*.

Table B-2. Coastal Rail Trail Segments 8 and 9 - NOP Comments - Submitted on the City of Santa Cruz Website

Submission Date	Comment/Question:	Agency/Organization:	First Name	Last Name
9/15/2021 7:55	Is this EIR covering the portion in the City limits only, or also the portion of Segment 9 that is in the unincorporated County?		Will	Fourt
9/17/2021 15:08	Why are you still wasting money on this project? This website is very biased, where is the item to be selected that says not in support? Please remember that this issue will probably be put to the voters and perhaps we should wait for that outcome before spending any more tax payer money.		Joe	Ward
9/18/2021 15:59	This is such an important project! It needs to go forward with all due speed!		Joyce	Nicholson
9/20/2021 16:58	I wish you could get this done a little faster, like before I'm dead…good luck Nathan		Mary	Alsip
9/20/2021 18:34	The EIR should consider the Boardwalk trestle with trail only option using the entire width of the corridor. The corridor should be rail banked and current rail infrastructure removed. A private company light rail excursion fun train is not why the county purchased this corridor. Funding options and less than optional corridor location for mass transit should direct the RTC away from rail considerations and begin planning for trail only option immediately.		Nathaniel	James
9/21/2021 7:20	I will use this segment to ride a bicycle from Swift St to Simpkins pool. There should be easy on/off from the trail to the pool. If local train service is eventually provided, it would be an advantage to provide for this trip.		Neil	Waldhauer
9/21/2021 13:40	I'm very interested in the trail.		Ruby	Domino
9/23/2021 3:20	I support Alternative 1: Railbank with Trail. For segment 9 in Live Oak area, once the trail is completed having a rail line right next to the trail would not be compatible with the active use of trail by people/pets. Any train passing that close to any users on the trail would frighten them. Also the cost of the infrastructure to maintain rail stock and the rail line for just a single right of way would be prohibitively expensive.		Paul	Lockwood
9/23/2021 21:47	I am in favor of both Segment 8 and 9, as long as it is Pedestrian and bicycling only. What happens to the SCBRL rails?		Leonard	Foreman
9/26/2021 15:40	I am in total support of the Rail Trail approach to this. Santa Cruz county badly needs better public transit that ties in with active transportation modes and reduces car-centric mobility. I would love to do more around Santa Cruz county, and doing that via bicycle is already pretty possible, but combine that with a "bike highway" like the rail trail and public transit and I can visit shops all over town without needing to burn any gas in a car (Ethos is a great store in Capitola I like to visit, but getting there even by car is inconvenient. We can have one of two Santa Cruzes: one where people can easily get around and access resources they need, tourists and locals alike, using a mix of environmentall-sustainable transport modes or we can have one where cars continue to be by far the largest focus and everyone else is a distance 2nd place. I vote for the former!		Bryant	Mairs
9/27/2021 13:48	There are Santa Cruz tarplants in the area of the meadow at Twin Lakes State Beach this is on the south side of the rail line.	CA Dept of Parks & Recreation, Santa Cruz District office	Linda	Hitchcock
9/27/2021 17:51	I am in favor of this community improvement and excited for it to be completed. Will trains ever run on the tracks going forward?		Kenneth	Hake
9/27/2021 20:17	I think Rail Trail is fantastic, particularly if it can get people to popular spots like the boardwalk, Natural Bridges, other beach spots - I think we should invest in Rail as well, for other commuter options. We should invest some in car infra. but increase investment in bike/rail options - If I had to choose to keep bike trail and lose rail investment, I would do that, but I would much rather keep both - Please don't tear up rail infra if you can avoid it. It will be very hard to fun in the future that way - We should also support artery elements, like bike paths to the beaches - As we do that part, we should also have bike parking areas		Wayne	Fenton
9/28/2021 15:59	Thank you.		Tauria	Linala
10/1/2021 9:09	Can the rail line along Beach Street be placed much closer to the beachside of Beach Street to avoid as much traffic as possible on Beach Street - so the train can operate as freely as possible past the round-a-bout? What can be done to finish segments 8 & 9 by next year?		Michael	Pisano
10/4/2021 13:25	Are there any renderings or projected models of what the rail trail might look like on Beach Street from the round about to Cliff street? Will the bike lane on the ocean side of the rail remain in place? Will the parking on the proposed inland side of the street be eliminated?		Willie	Case

Submission Date	Comment/Question:	Agency/Organization:	First Name	Last Name
10/6/2021 11:04	The "Railbank with Trail" alternative being considered during the EIR should be renamed, considered and treated as a "Railbank with INTERIM Trail". As of the today's date, no policy has been adopted by the County of Santa Cruz, The Regional Transportation Commission or the City of Santa Cruz which supports railbanking the corridor, nor a "Railbank with Trail" use of the rail corridor. In fact, both the RTC and by the City of Santa Cruz City Council have taken recent actions confirming their support for implementing high-capacity public transit alongside the trail, more specifically passenger rail transit. Accordingly, the "railbank with trail" alternative will necessarily be an interim trail use. Please make the adjustments necessary in the scoping of the contemplated EIR so the full environmental impact of an INTERIM trail use, including discontinuing the interim use and restoration of the rail line, can be evaluated and fully understood by the community and the decision makers.		Mark	Mesiti-Miller
10/6/2021 17:37	I just want to voice my support for the proposed project of Rail with Trail. Thank you for preserving this vital rail corridor while providing us new paths for active transportation.		Kyle	Kelley
10/6/2021 17:42	The "railbank with trail" alternative seems foolish since rail transit is so important to the future of our county. Removing the tracks, building a trail, tearing down the trail, adding new rail, constructing a new trail also seems expensive, wasteful and time consuming. There is also likely to be a lot of outcry from the public that building the rail and rebuilding the trail will be taking away their trail.		David	Dean
10/15/2021 12:18	We have concerns regarding the row of heritage eucalyptus trees along the rail right of way at the beginning of Segment 9 and other large trees along this section. If this project requires their removal we are opposed on grounds of habitat and aesthetic impacts as well as visual and aesthetic. Replanting with saplings is inadequate mitigation. Should the project require heritage tree removal it will be challenged.	Save Our Big Trees	Gillian	Greensite

CALIFORNIA COASTAL COMMISSION
CENTRAL COAST DISTRICT
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
PHONE: (831) 427-4863
FAX: (831) 427-4877
WEB: WWW.COASTAL.CA.GOV

October 15, 2021

Nathan Nguyen, P.E., Project Manager
City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz CA 95060
nnguyen@citysantacruz.com

Subject: Notice of Preparation (NOP) *o*f a Draft Environmental Impact Report (DEIR) for Rail Trail Segments 8 and 9

Dear Mr. Nguyen:

Thank you for the opportunity to provide comments on the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the proposed Rail Trail Segments 8 and 9 Project. As a preliminary matter, we would like to emphasize that we continue to be very supportive of the development of the Monterey Bay Sanctuary Scenic Trail (MBSST) as a critical component and central "spine" of the California Coastal Trail (CCT) network and for expanding multi-modal transportation opportunities in the region. Coastal Commission staff see this upcoming DEIR as another step in the process of ensuring that the MBSST/CCT are appropriately integrated into the preservation and implementation of a full suite of short- and long-term multi-modal opportunities for Santa Cruz County and the greater Monterey Bay area. The MBSST/CCT are envisioned as key ingredients of a sustainable and interlinked transportation system in the coastal zone, a goal echoed in federal, state, and local policies and programs alike, including the California Coastal Act and the respective Local Coastal Programs (LCPs) that the proposed system crosses.

We believe that analyzing the alternatives and opportunities of this trail system has to be approached within the larger context of alternative transportation opportunities along Santa Cruz Branch Line (SCBL) corridor and other interconnections throughout Santa Cruz County. Improving transportation in Santa Cruz County by offering safer, greener, and healthier options for bicycling, walking, and public transit in ways that connect residential areas with employment areas, schools, parks, beaches, and community centers along the coast would provide many benefits. Designed with these factors in mind, the MBSST/CCT can also help advance the state and local sustainability measures of improved coastal access and recreation, mobility, environmental conditions, safety, economic vitality and health, as well as to reduce Vehicle Miles Traveled (VMTs) and greenhouse gas (GHG) emissions.

At the same time, we also recognize that a project of this nature invariably raises some questions and issues, and we appreciate that the CEQA process can help identify and

address such questions and issues, provide a forum for public discussion, and develop materials to help facilitate the forthcoming coastal development permit (CDP) processes. With that in mind, we offer the following comments to consider in the development of the DEIR.

Project Description

Per the NOP, the purpose of the project is to provide an accessible bicycle and pedestrian path for active transportation, recreation, and environmental and cultural education along the existing SCBL corridor. Specifically, the Rail Trail Segments 8 and 9 Project (Project) is a 2.2-mile bicycle and pedestrian path that would extend along the corridor from the Beach Street/Pacific Avenue roundabout intersection in the City of Santa Cruz to 17th Avenue near Shoreline Middle School in the unincorporated County.[1] Segment 8 (totaling 0.6 miles) would begin at the roundabout and extend to the existing San Lorenzo River Trestle Bridge (Trestle Bridge). This section would consist of improvements to the existing Class IV bicycle lane and to the existing sidewalk along Beach Street, both of which run parallel to the Santa Cruz Beach Boardwalk (Boardwalk). Segment 9 (totaling 1.6 miles) would extend from the downcoast side of the Trestle Bridge and would continue to the downcoast side of 17th Avenue, connecting the City of Santa Cruz's main beachfront (and its downtown area/levee trail system) with the Twin Lakes area near the middle school and the Simpkins Swim Center. Segment 9 would be comprised of a 10-to-12-foot wide[2] multi-use bicycle and pedestrian trail on the inland side of the existing railroad tracks, with safety fencing between the trail and the tracks. Overall, the proposed project alternative preserves existing railroad infrastructure and space for potential future development.

CDP Jurisdictions and Permitting

In terms of coastal permitting, the proposed project would extend across City of Santa Cruz, Coastal Commission, and Santa Cruz County CDP jurisdictions. Specifically, Segment 8 and the portion of Segment 9 between the Trestle Bridge and the upcoast edge of the Santa Cruz Harbor would be located within the City's jurisdiction; the portion of Segment 9 that crosses over the Harbor would be located within the Commission's jurisdiction; and the remainder of Segment 9 would be located within the County's jurisdiction. We note that LCPs derive their regulatory authority from the Coastal Act, and thus the City's and County's LCPs share many similarities to the Coastal Act related to development requirements and coastal resource protection. There are, however, standards unique to the Coastal Act and the respective LCPs and thus it will be important that the DEIR evaluates each of the project components against the

[1] The Project does not include trail improvements associated with the San Lorenzo River Railroad Trestle Bridge as these trail improvements were authorized (and completed) pursuant to a separate process, including a CDP from the Commission (CDP 3-18-0777).

[2] Per the NOP and under the preferred alternative, the trail would be 10 to 12 feet wide, but it could be reduced to 8 feet in width where the width of the trail area is constrained. Per the NOP, specific trail width would be determined during the preliminary design stage, with the goal of reducing significant project impacts as much as possible. The estimated trail width for the "Railbank with Trail" alternative has not yet been determined.

respective applicable LCP and Coastal Act standards.[3] In addition, it is possible that the project proponents may decide to pursue a consolidated CDP application,[4] for which the standard of review would be the Coastal Act, and thus, in anticipation of that case, all of the project components should be evaluated against Coastal Act provisions to help facilitate potential permit consolidation decisions.

SCBL Corridor Alternative Options

The NOP indicates that the DEIR will evaluate the proposed project alternative (which would align the trail adjacent to the tracks and maintain existing rail infrastructure in place) as well as a "Railbank with Trail" (i.e., "transit banking") alternative. The proposed project alternative would reduce the size of the trail in a few segments to preserve existing rail infrastructure. The "Railbank with Trail" alternative, however, would entail removal of the entire existing railroad tracks and related development in Segment 9 to allow trail construction as needed anywhere within the corridor. The "Railbank with Trail" alternative would prioritize using all the rail corridor area now for the trail, while providing for a future project (if it were to occur) to install tracks (or other means of facilitating transit options) and adjust the trail locations or size to accommodate both transportation alternatives (i.e., trail and transit) within the corridor later. In other words, the "Railbank with Trail" alternative would make full use of the corridor now for the trail, while postponing decisions regarding rail and/or other forms of transit within the corridor to be discussed, debated, and decided upon later timelines. The DEIR will need to evaluate in detail how the "Railbank with Trail" alternative will affect the feasibility of reintroducing rail along this corridor at a future date, so that reviewers can better understand the implications of the decisions being made now. The NOP also indicates that other project alternatives may also be considered, and those alternatives may be appropriate for further information gathering.[5]

From our perspective, the SCBL is an incredibly important public resource that connects the various cities and the County in a way that would be next to impossible to create today with the relatively built out communities. It therefore is extremely important that it

[3] And note that the portions of the project along Beach Street in the City of Santa Cruz, and some portions of the project in the County's jurisdiction, are also subject to the public access and recreation policies of the Coastal Act because they are located along the first through public road inland from the ocean.

[4] Pursuant to Coastal Act Section 30601.3, CDP applications that span the Commission's CDP jurisdiction and that of local governments can be consolidated if the project applicant, the Coastal Commission's Executive Director, and the affected local governments (here the City and the County) agree to such a consolidated process. Consolidation is only allowed if doing so (i.e., assigning all discretionary CDP decisions to the Commission and the Commission's once monthly agenda cycle at various venues up and down the state (or virtual hearings during the current pandemic crisis)) would not substantially impair public participation. If not so consolidated, then three separate CDP processes and three separate CDP decisions (where the City and County CDP decisions could be appealed to the Commission) will be required.

[5] Alternatives that should be evaluated include both a rail-and-trail option or a trail along with another type of transit option (e.g., a dedicated trolley or bus lanes), or a trail-alone option. As above, these alternatives should consider their trail benefits along with any impacts to the feasibility of reintroducing rail along this corridor.

is utilized to its full sustainable transportation potential. In that evaluation, it is important to discuss various alternatives and the CEQA process provides an important tool towards providing decision-makers and the community with the information needed to make informed decisions about how best to proceed. In that regard, evaluation of railbanking as an alternative in the DEIR seems appropriate, though as discussed below railbanking or similar alternatives should document the array of potential impacts to the long-term development of complete multi-modal transit options. In other words, we believe the CEQA process, including the forthcoming DEIR, is a good place to thoroughly evaluate the pros, cons, and environmental impacts of all the alternatives, particularly to address questions that will invariably arise as the permitting process proceeds.

However, at the very least, we do not see how a viable alternative would be one without a trail component (i.e., the no project scenario). In fact, and importantly, when the MBSST network is fully developed, it will offer one of the most significant and valuable pedestrian and bicycle transportation networks in the country. The MBSST will also be an important link in the statewide CCT system, a high priority trail system along the shoreline and more inland coastal areas extending from Oregon to Mexico that is currently about 60 percent complete.[6] Thus, it will constitute a continuous critical spine of the CCT through this region, a vision shared by the Commission, the State Coastal Conservancy, Caltrans, and the California Department of Parks and Recreation, with various private and public (including federal and state) partners. This trail system is one part of a potential larger multi-modal system and will provide both locals and the many visitors to the Santa Cruz area a sustainable transportation option for accessing some of the most stunning beaches, shorelines, coastal terraces, hills, redwood forests, and other resource areas in the state, and connect the more densely urbanized stretches of the County with the North Coast and South County areas, including the City of Watsonville.

SCBL Corridor Alternatives' Specific Needs

In working through the various analyses, the DEIR should be structured to allow for easy comparisons in trail utility and transit opportunities across the alternatives, both now and in the future (e.g., where a trail segment may need to be modified to accommodate rail/transit at a current or future date or how a trail segment may facilitate or inhibit potential rail transit opportunities down the road). This analysis should extend to each alternative's respective effects on local transportation dynamics, trail user experience, costs/funding, legal requirements and environmental/coastal resource impacts to ensure that the public and decisionmakers understand the full picture. More specifically, it is important that the DEIR identify: 1) the corridor's width throughout Segments 8 and 9 including the ROW or other public lands width on either side of the

[6] A continuous trail along California's shoreline has long been a collective objective for California's coastal zone, including as articulated in 1972's Proposition 20 (the "Coastal Initiative") and 1976's Coastal Act. Further details on CCT alignment principles, including continuity and proximity to the sea, may be found in the document "Completing the California Coastal Trail" prepared by the State Coastal Conservancy in 2001 and on the Commission's Coastal Access Program webpage at https://www.coastal.ca.gov/access/ctrail-access.html.

existing tracks; 2) the estimated width of the trail and the width on either side of the trail in the "Railbank with Trail" alternative; and 3) what will happen at pinch points, whether man-made (e.g., bridges), natural (e.g., slopes and habitat areas), or rail/transit-related. In other words, the benefits and negatives for the timing and configuration of trail and potential future transit need to be clearly analyzed for each alternative. Trail alignment options should also be thoroughly evaluated for each alternative. For example, with rail/transit banking, there may be more options for how to site and design a trail now (e.g., centered on the corridor, directly over the existing tracks, etc.); however, there should also be recognition that future alignment changes might become necessary to accommodate rail/transit or that it may preemptively inhibit this corridor from being used in other transportation capacities in the future). Such considerations will, of course, need to include the legal requirements and their consequences that must be met by the Santa Cruz Regional Transportation Commission.

Further, the DEIR should detail and compare the alternatives' applicable project-related details, including: how the trail will be distinguished/separated from current rail and/or future rail/transit; whether any of the narrow/constrained areas may trigger additional planning/funding needs in order to safely/legally allow for rail/transit; whether/how any adjacent road right-of-way is planned to be used; reasons for the trail being on one or the other side of the tracks/transit options, and necessary crossovers, etc. And, to the extent feasible, the DEIR should also explain the types of improvements that would be expected and/or anticipated to provide rail/transit options in the future (e.g., track upgrades, grading, filling, etc.), for both the preferred alternative and the "Railbank with Trail" alternative.

Finally, we recommend that the DEIR clearly describe the term "railbanking" as it is used here, including the various scenarios that may trigger future trail relocation/rebuilding to accommodate future rail/transit use, and that the DEIR outline the various required steps (including decision-making agencies and permitting processes) that would be part of any such future process. This discussion would also benefit from an explanation of railbanking legal requirements from the Surface Transportation Board and how they apply to the SCBL situation. The DEIR should also explain, to the extent feasible, how under that alternative existing rail-related development would be removed now in the banking alternative, how the area would be treated to prepare it for a trail, and how rail/transit subsequently could be accommodated in the future.

Probable Environmental Impacts

The NOP indicates that the proposed project will require DEIR evaluation of impacts in the following key environmental categories: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology/soils, VMTs, GHG emissions and climate change related impacts, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, recreation, transportation/circulation, and tribal cultural resources. The list identified appears encompassing enough to frame project related impacts and appropriate mitigations, including in terms of potential alternatives to avoid identified impacts. We offer the following additional comments for DEIR consideration on these points.

Although Segments 8 and 9 would span relatively urbanized areas of the City of Santa Cruz and Santa Cruz County, the proposed project will nevertheless have the potential to result in habitat impacts, primarily because the project would be adjacent to and would cross over a number of creeks, lagoons, and tidally-influenced waters (including Pilkington Creek, Woods Creek/Woods Lagoon, Leona Creek/Schwan Lagoon, and the Santa Cruz Harbor), but also because there may be habitat resources within the SCBL corridor itself that need to be addressed.[7] In all cases, it is incumbent on the DEIR to appropriately identify such resources and, consistent with the Coastal Act and the LCPs, to avoid impacts to them and, where impacts are unavoidable, to provide adequate mitigation for those impacts. Certain resources may also qualify as environmentally sensitive habitat areas (ESHA)[8] or wetlands,[9] and such resources are governed by very specific allowed uses and allowed impact requirements. As a general rule, impacts are required to be avoided in such areas (if uses are allowed in the first place) and their required buffers, and the DEIR should evaluate options to do so. If any impacts are anticipated under other options, they too should be clearly identified, and mitigations identified.

Other Specific Locational and Multi-Modal Public Access Issues

In addition, two sections of Segment 9, specifically the harbor crossing at Murray Street Bridge and the connection from the San Lorenzo River Trestle Bridge trail to Segment 9, which continues along East Cliff Drive/Murray Street, present unique challenges and raise several potentially significant coastal resource issues including the protection of public recreational access, public views, water quality, geologic hazards, and biological resources.

Regarding the harbor crossing, it is our understanding that there are plans underway to redevelop the Murray Street Bridge. The DEIR should clarify the status of that project, including its timing, and whether it intends to preserve the existing, although limited, pedestrian sidewalk and bicycle path on the seaward side of the bridge; if the project would widen the bridge and provide for exclusive bicycle and pedestrian access (i.e., separated from vehicles) on one or both sides of the bridge; or whether such access will be entirely funneled to the proposed Segment 9 harbor crossing. The DEIR should also clearly identify existing and proposed pedestrian/bicycle connectivity from Segment 9 to East Cliff Drive/Twin Lakes State Beach, to the lower and upper Harbor areas (whether along Lake/5th Avenue or along the harbor-edge trails) and along both sides of the Harbor, as well as to the inland Twin Lakes State Beach trails and the Simpkins Center. The DEIR should evaluate the various alternatives to maximize pedestrian and bicycle access/connectivity to these coastal destinations, while maintaining/improving visual

[7] Past trail alignments thorough relatively urbanized segments of the MBSST (e.g., in the City of Santa Cruz) have encountered such resources within the actual corridor including in and/or directly adjacent to the proposed trail alignment, causing siting and design difficulties.

[8] Defined by the Coastal Act and the LCPs to include “any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.”

[9] Pursuant to the Coastal Act and LCP’s one-parameter definition, as opposed to the U.S. Army Corps of Engineers’ three-parameter definition.

access and protecting habitat/water quality, consistent with the Coastal Act and LCP directives. Relatedly, the DEIR should identify the preferred alternative that is most protective of coastal resources, complies with other Coastal Act policies such as minimizing VMT, and provides for a continuous, safe, and scenic trail system. Any overwater crossing should also make use of appropriate bridge coloration and railing design to minimize impacts to public views and the character of the area; employ appropriate best management practices during construction including to protect water quality and sensitive marine and terrestrial/avian species; and consider potential tsunami events.

Regarding the connection from the Trestle Bridge to the SCBL along East Cliff Drive/Murray Street, we recognize that there are physical limitations at this connection point but would like to emphasize that the existing conditions do not currently adequately serve pedestrians, bicyclists, and vehicles. We recommend analyzing a range of alternatives at this critical connection point that would widen, more appropriately distinguish, and generally improve pedestrian, bicycle, and vehicular traffic, and ensure seamless connectively for the trail in the SCBL. These strategies may also include improvements that the City may contemplate to the existing street, sidewalk, and right-of-way configurations to better accommodate public users in these areas.

Relatedly and more broadly, the DEIR should clearly identify the locations where the proposed trail would be located along the street and/or cross pedestrian/vehicular intersections. The DEIR should evaluate alternatives at those locations to facilitate safe use/crossings and because these crossings have raised significant community concerns to date. Segment 9 especially will traverse more heavily trafficked areas compared to other constructed segments (e.g., from Natural Bridges Drive to the Bay St./California St. intersection). Finally, it will be important for the DEIR to evaluate alternatives for the portion of Segment 8 fronting the Boardwalk from the roundabout to the Trestle Bridge. As is, this segment provides a less than ideal trail user experience. Specifically, the bike lane is inadequately delineated from the vehicular lane by plastic poles/rubber stops and it is commonly viewed/used as an extension of the Boardwalk including as a vehicular drop-off/loading area with cars and/or groups of people sometimes occupying significant portions of the area intended for bicycles).

Because Segment 8 is one of the most popular and heavily used coastal visitor destinations in the county, and there are various competing demands for a relatively small/finite space, we recommend evaluating alternatives that better demarcate and facilitate access for all users (i.e., MBSST users, beach goers, and those visiting the Boardwalk). On this point, the DEIR should explore options for improving the experience here, including potential grading/structurally separating the trail areas to more clearly distinguish it from the vehicular lanes/Boardwalk and to clearly delineate it as a recreational trail. Relatedly, the DEIR needs to also identify the improvements to Segment 8 that will address potential conflicts from pedestrians crossing the trail to and from the Boardwalk and the various Boardwalk parking lots located inland of Beach Drive, and evaluate different mechanisms to improve and harmonize bicycle, pedestrian, and vehicular traffic throughout this segment. In addition, connections from

the trail through the Boardwalk to the beach need to be accounted for, including signage to appropriately direct the public.

In closing, we look forward to working with you on this important public infrastructure project, and we thank you for your consideration of these comments. If there are any questions, we are available for discussion should the City, the County, the RTC and/or the DEIR team need clarification from us. Please do not hesitate to contact me about these comments or to discuss the project further.

Sincerely,

DocuSigned by:
Rainey Graeven
AFF4284CFEB54EA...

Rainey Graeven
Senior Coastal Transportation Planner
Central Coast District
California Coastal Commission

Cc (sent electronically):
Lee Butler, City of Santa Cruz Planning Department
Paia Levine, Santa Cruz County Planning Department
Matt Machado, Santa Cruz County Public Works Department
Jeff Gaffney, Santa Cruz County Parks Department
Guy Preston, Regional Transportation Commission
Chris Spohrer, California Department of Parks and Recreation
Kris Reyes, Santa Cruz Seaside Company
Holland Mac Lurie, Santa Cruz Port District

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Bay Delta Region
2825 Cordelia Road, Suite 100
Fairfield, CA 94534
(707) 428-2002
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

October 18, 2021

Nathan Nguyen, P.E.
City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, CA 95060
nnguyen@citysantacruz.com

Subject: Rail Trail Segments 8 and 9, Notice of Preparation of a Draft Environmental Impact Report, SCH No. 2021090262, Santa Cruz County

Dear Mr. Nguyen:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) prepared by the City of Santa Cruz (City) for the Rail Trail Segments 8 and 9 (Project), located in Santa Cruz County. CDFW is submitting comments on the NOP regarding potentially significant impacts to biological resources associated with the Project.

CDFW ROLE

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA; Pub. Resources Code, § 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources (e.g., biological resources). CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Program, and other provisions of the Fish and Game Code that afford protection to the state's fish and wildlife trust resources.

California Endangered Species Act

Please be advised that a CESA Permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. Issuance of a CESA Permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA Permit.

CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (CEQA section 21001(c), 21083, and CEQA Guidelines section 15380, 15064, 15065). Impacts must be avoided or mitigated to less-

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

than-significant levels unless the CEQA Lead Agency makes and supports Findings of Overriding Consideration (FOC). The CEQA Lead Agency's FOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code, section 2080.

Lake and Streambed Alteration Program

The Project has the potential to impact resources including mainstems, tributaries and floodplains associated with the San Lorenzo River, Pilkington Creek, Woods Lagoon, Leona Creek, and Schwan Lagoon. Notification is required, pursuant to CDFW's LSA Program (Fish and Game Code, section 1600 et. seq.) for any Project-related activities that will substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank (including associated riparian or wetland resources); or deposit or dispose of material where it may pass into a river, lake or stream. CDFW generally considers work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are subject to notification requirements. CDFW, as a Responsible Agency under CEQA, will consider the CEQA document for the Project. CDFW may not execute a final LSA Agreement until it has complied with CEQA (Public Resources Code section 21000 et seq.) as the responsible agency.

PROJECT DESCRIPTION

The Proposed Project consists of a 2.2-mile bicycle and pedestrian system, divided into two segments. Segment 8 (0.6 miles) and Segment 9 (1.6 miles) that extend along the Santa Cruz Branch Rail Line (SCBRL) corridor, from the Beach Street/Pacific Avenue Roundabout on the west to the eastern side of 17th Avenue on the east. The Proposed Project, Rail with Trail, includes improvements to the Segment 8 existing Class IV Cycle Track for bicycles and sidewalk for pedestrians. Segment 9 will include construction of a multi-use pedestrian and bicycle trail 10-12 feet wide on the inland side of the tracks. The proposed Alternative 1: Railbank with Trail, will keep the same improvements on Segment 8, but the multi-use trail for Segment 9 will be located along the rail centerline, with the existing tracks and ties removed.

The CEQA Guidelines (§§15124 &15378) require that the draft EIR incorporate a full Project description, including reasonably foreseeable future phases of the Project, and that contains sufficient information to evaluate and review the Project's environmental impact. Please include a complete description of the following Project components in the Project description:

- Footprints of permanent Project features such as the length and width of the proposed trail and temporarily impacted areas such as staging areas;
- The type of trail base such as asphalt, concrete, gravel, or dirt;
- Introduction of new light sources along the trail;

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

- Location, type, length, and height of all fencing, including whether it will be permanent or temporary;

- Encroachment by widening the trail into riparian habitat or other sensitive area.

ENVIRONMENTAL SETTING AND LOCATION

Sufficient information regarding the environmental setting is necessary to understand the Project's, and its alternative's (if applicable), significant impacts on the environment (CEQA Guidelines, §§15125 & 15360). CDFW recommends that the CEQA document prepared for the Project provide baseline habitat assessments for special-status plant, fish and wildlife species located and potentially located within the Project area and surrounding lands, including all rare, threatened, or endangered species (CEQA Guidelines, §15380). Fully protected, threatened or endangered, candidate, and other special-status species that are known to occur, or have the potential to occur in or near the Project site, include, but are not limited to:

Common Name	**Scientific Name**	**Status**
Santa Cruz black salamander	*Aneides niger*	SSC
Steelhead - central California coast DPS	*Oncorhynchus mykiss irideus* pop. 8	FT
Tidewater goby	*Eucyclogobius newberryi*	FE
Western pond turtle	*Emys marmorata*	SSC
Monarch butterfly	*Danaus plexippus* pop. 1	FC
Black swift	*Cypseloides niger*	SSC
Santa Cruz tarplant	*Holocarpha macradenia*	FT, SE
Nesting birds		
Notes: FE = Federally Endangered; FT = Federally Threatened; FC = Federal Candidate for listing; SE = State Endangered; SSC = State Species of Special Concern; DPS = Distinct Population Segment		

Habitat descriptions and species profiles should include information from multiple sources: aerial imagery, historical and recent survey data, field reconnaissance, scientific literature and reports, and findings from "positive occurrence" databases such

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

as California Natural Diversity Database (CNDDB). Based on the data and information from the habitat assessment, the CEQA document can then adequately assess which special-status species are likely to occur in the Project vicinity.

CDFW recommends that prior to Project implementation, surveys be conducted for special-status species with potential to occur, following recommended survey protocols if available. Survey and monitoring protocols and guidelines are available at: https://www.wildlife.ca.gov/Conservation/Survey-Protocol.

Botanical surveys for special-status plant species, including those listed by the California Native Plant Society (http://www.cnps.org/cnps/rareplants/inventory/), must be conducted during the blooming period for all sensitive plant species potentially occurring within the Project area and require the identification of reference populations. Please refer to CDFW protocols for surveying and evaluating impacts to rare plants available at: https://www.wildlife.ca.gov/Conservation/Plants.

COMMENTS AND RECOMMENDATIONS

The CEQA Guidelines (§15126.2) necessitate that the draft EIR discuss all direct and indirect impacts (temporary and permanent) that may occur with implementation of the Project. This includes evaluating and describing impacts such as:

- Potential for “take” of special-status species;
- Loss or modification of breeding, nesting, dispersal and foraging habitat, including vegetation removal and alteration of soils;
- Permanent and temporary habitat disturbances associated with ground disturbance, noise, lighting, reflection, air pollution, traffic or human presence; and
- Obstruction of movement corridors or access to water sources and other core habitat features.

CDFW offers the following comments and recommendations to assist the City in adequately identifying and/or mitigating the Project’s significant, or potentially significant, direct, and indirect impacts on biological resources.

COMMENT 1: Safety Fencing

Issue: The Proposed Project proposes to install safety fencing between the trail and tracks along Segment 9, from the east side of the San Lorenzo River Trestle Bridge to the east side of 17th Avenue, to prevent pedestrians form entering the railroad tracks.

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

Evidence the impact would be significant: Fencing can be a hazard to wildlife resulting in entanglement and mortality (van der Ree 1999, Stuart et al. 2001, Harrington and Conover 2006). Fencing can also cause a connectivity barrier by preventing movement resulting in habitat loss and fragmentation (Jakes et al, 2018, Harrington and Conover, 2006).

Recommendations for fencing to minimize significant impacts: CDFW recommends that the Project specify proposed fencing plans and identify current wildlife trails throughout the Project Area to install wildlife friendly fencing at these locations that make it easier for wildlife species to traverse. To decrease wildlife entanglement and mortality, CDFW recommends that the top wire of fences are no more than 40 inches above the ground, the space between the top two wires are at least 12 inches apart, the bottom wire of fences are 18 inches above the ground, the fences does not include vertical wires, fence posts are installed at 16.5-foot intervals, and fence wires are visible to animals and birds (see A Landowner's Guide to Wildlife Friendly Fences: How to Build Fence with Wildlife in Mind found online at https://www.nrcs.usda.gov/wps/PA_NRCSConsumption/download/?cid=nrcseprd1080608&ext=pdf).

COMMENT 2: Impervious Surfaces

Issue: The Project could increase impervious surfaces at the Project site with the widening or creation of a paved trail. Impervious surfaces have the potential to significantly affect fish and wildlife resources by altering runoff hydrograph and natural streamflow patterns.

Evidence the impact would be significant: Adding impervious surfaces, through the installation of hardscape materials, can modify natural streamflow patterns by increasing the magnitude and frequency of high flow events and storm flows (Hollis 1975, Konrad and Booth 2005).

Recommendations to minimize significant impacts: CDFW recommends mapping areas with creeks, drainages, culverts and where there is potential for concentrated runoff to occur. Permeable surfaces should be incorporated throughout the Project to allow stormwater to percolate in the ground and prevent stream hydromodification (see Evaluating the potential benefits of permeable pavement on the quantity and quality of stormwater runoff (usgs.gov)).

COMMENT 3: Artificial Lighting

Issue: The Project has the potential to increase artificial lighting if new sources of light are installed along the trail. Artificial lighting often results in light pollution, which has the potential to significantly and adversely affect fish and wildlife.

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

Evidence the impact would be significant: Night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication such as bird song (Miller, 2006), determining when to begin foraging (Stone et al., 2009), behavior thermoregulation (Beiswenger, 1977), and migration (Longcore and Rich, 2004).

Recommendations to minimize significant impacts: CDFW recommends eliminating all non-essential artificial lighting. If artificial lighting is necessary, CDFW recommends avoiding or limiting the use of artificial lights during the hours of dawn and dusk, when many wildlife species are most active. CDFW also recommends that outdoor lighting be shielded, cast downward, and does not spill over onto other properties or upwards into the night sky (see the International Dark-Sky Association standards at http://darksky.org/) and limited to an output of 2700 kelvin or less from each luminaire.

FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (Fish and Game Code, section 711.4; Pub. Resources Code, section 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

Thank you for the opportunity to comment on the Project's NOP. If you have any questions regarding this letter or for further coordination with CDFW, please contact Ms. Serena Stumpf, Environmental Scientist, at (707) 337-1364 or Serena.Stumpf@wildlife.ca.gov; or Mr. Wesley Stokes, Senior Environmental Scientist (Supervisory), at Wesley.Stokes@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Stephanie Fong
CF047D7F8D234E1...

Stephanie Fong
Acting Regional Manager
Bay Delta Region

ec: State Clearinghouse # 2021090262

REFERENCES

Beiswenger, R. E. 1977. Diet patterns of aggregative behavior in tadpoles of *Bufo americanus*, in relation to light and temperature. Ecology 58:98–108.

DocuSign Envelope ID: 5FCD212C-282C-4251-ABDF-6BBB07ACB03B

Harrington, J. L., and M. R. Conover. 2006. Characteristics of ungulate behabior and mortality associated with fences. Wildlife Society Bulletin 34:1295–1305.

Hollis, G. 1975. The effect of urbanization on floods of different recurrence interval. Water Resources Research 11:431-435.

Jakes, A. F., Jones, P. F., Paige, C., Sidler, R. G., and M. P. Huijser. 2018. A fence runs through it: A call for greater attention to the influence of fences on wildlife and ecosystems. Biological Conservation 227: 310-318.

Konrad, C.P. and D.B. Booth. 2005. Hydrologic changes in urban streams and their ecological significance, paper presented at American Fisheries Society Symposium, American Fisheries Society

Longcore, T., and C. Rich. 2004. Ecological light pollution - Review. Frontiers in Ecology and the Environment 2:191–198.

Miller, M. W. 2006. Apparent effects of light pollution on singing behavior of American robins. The Condor 108:130–139.

Stone, E. L., G. Jones, and S. Harris. 2009. Street lighting disturbs commuting bats. Current Biology 19:1123–1127. Elsevier Ltd.

Stuart, J. N., M. L. Watson, T. L. Brown, and C. Eustice. 2001. Plastic netting: An entanglement hazard to snakes and other wildlife. Herpetological Review 32:162–164.

Van der Ree, R. 1999. Barbed wire fencing as a hazard for wildlife. The Victorian Naturalist 116:210–217.

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102

September 30, 2021

Nathan Nguyen
City of Santa Cruz Public Works Department
809 Center Street, Room 201
Santa Cruz, CA 95060

Re: Notice of Preparation for the proposed Monterey Bay Sanctuary Scenic Trail Segments 8 and 9 Project.
SCH# 2012082075.

Dear Mr. Nguyen:

The California Public Utilities Commission's (Commission) Rail Crossing Engineering Branch (RCEB) is taking this opportunity to address the City of Santa Cruz (City) Notice of Determination for the proposed Monterey Bay Sanctuary Scenic Trail Segments 8 and 9 Project. RCEB staff offers the following comments:

Commission Requirements and Policy

The Commission has jurisdiction over the safety of highway-rail crossings (crossings) in California. The Commission has exclusive power over the design, alteration, and closure of crossings, pursuant to Public Utilities Code Section 1201 et al. Based on Commission Rules of Practice and Procedure, Rule 3.9, an application to the Commission is required to construct a railroad across a public road. The Monterey Bay Sanctuary Scenic Trail Segments 8 and 9 Project is subject to several other rules and regulations involving the Commission. The proposed Project's design criteria will need to comply with the California Manual on Uniform Traffic Control Devices (MUTCD) and Commission General Orders (GO's). The following GO's, among others, may be applicable:

- GO 26-D (regulations governing clearances on railroads and street railroads with reference to side and overhead structures, parallel tracks, the crossing of public roads, highways, and streets)
- GO 72-B (rules governing the construction and maintenance of crossings at grade of railroads with public streets, roads, and highways)
- GO 75-D (regulations governing standards for warning devices for at-grade highway-rail crossings)
- GO 88-B (rules for altering public highway-rail crossings)
- GO 95 (rules for overhead electric line construction)
- GO 118 (regulations governing the construction, reconstruction, and maintenance of walkways adjacent to railroad trackage and the control of vegetation adjacent thereto).

Specific Project Comments

According to the OND and supporting documentation, the multi-use trail would be located on the inland side of the railroad tracks.
For Segment 8, between the Roundabout and the existing ramp to the San Lorenzo River Trestle Trail, the Project generally includes improvements to the existing Class IV Cycle Track for bicycles and sidewalk for pedestrians along Beach Street adjacent to the Santa Cruz Beach Boardwalk amusement park.
For Segment 9, from the east side of the San Lorenzo River Trestle Bridge to the east side of 17th Avenue, the trail would be 10-12 feet wide (but may be reduced to 8 feet in areas with existing constrained conditions). It would continue to be on the inland side of the tracks, with safety fencing between the trail and the tracks.
The remaining portion of Segment 8 along the San Lorenzo River Trestle Bridge requires no improvements.

RCEB recommends that the City add language that any future development adjacent to or near the railroad (ROW) is planned with the safety of the rail corridor in mind. The trail project may increase traffic volumes at highway-rail crossings and trail and bike intersections. This includes considering pedestrian circulation patterns or destinations with respect to railroad ROW and compliance with the Americans with Disabilities Act.

Mitigation measures to consider include, but are not limited to, the planning for grade separations for major thoroughfares with no at-grade rail crossings as that configuration provides the most extensive safety considerations to the public, improvements to existing at-grade crossings due to increase in traffic volumes, and continuous vandal-resistant fencing or other appropriate barriers to limit the access of trespassers onto the railroad right-of-way.

Field Diagnostic meetings are required at all impacted or potentially new crossings. The Field Diagnostic Team consists of staff and representatives from the City, the CPUC, Santa Cruz County Regional Transportation Commission (SCCRTC), or the County of Santa Cruz, and other stakeholders. This review includes a detailed analysis of the crossing. During the field diagnostic review, the Field Diagnostic Team evaluates appropriate hazard elimination recommendations and determines whether the Project's development is feasible.

The Commission is the responsible agency under CEQA section 15381 regarding this Project. As such, we much appreciate and thank you for the opportunity to work with the City to improve public safety as it relates to crossings in the City. We request that RCEB be kept informed of all developments associated with the Templeton to Atascadero Connector Project. Meetings should be arranged with the Commission's RCEB staff to discuss relevant safety issues and conduct diagnostic reviews of any proposed and impacted crossing

locations within the proposed Monterey Bay Sanctuary Scenic Trail Segments 8 and 9 Project.

If you have any questions, please contact Eyitejumade "Ade" Sogbesan via email at es3@cpuc.ca.gov.

Sincerely,

Eyitejumade “Ade” Sogbesan
Utilities Engineer
California Public Utilities Commission
Rail Safety Division
Rail Crossings and Engineering Branch

SANTA CRUZ COUNTY REGIONAL TRANSPORTATION COMMISSION
1523 Pacific Ave., Santa Cruz, CA 95060-3911 • (831) 460-3200 FAX (831) 460-3215 EMAIL info@sccrtc.org

Nathan Nguyen, P.E
City of Santa Cruz
809 Center Street, Room 201
Santa Cruz, California, 95060

October 15, 2021

RE: Notice of Preparation of an EIR for Rail Trail Segments 8 & 9

Dear Mr. Nguyen,

RTC is owner of the Santa Cruz Branch Rail Line and is the Regional Transportation Planning Agency for Santa Cruz County. In these capacities, RTC is coordinating with the City of Santa Cruz to construct the Coastal Rail Trail Project from Beach Street/Pacific Avenue Roundabout to 17th Avenue.

RTC supports the City of Santa Cruz's environmental review of a rail and trail alignment on the Santa Cruz Branch Rail Line from Beach Street to 17th Avenue, referred to as Rail with Trail.

RTC also supports an analysis of alternative alignments as required under the California Environmental Quality Act. Although the alternative, referred to as Railbank with Trail, is contingent upon railbanking the Santa Cruz Branch Rail Line, it should be noted that railbanking would allow either alternative to proceed to construction.

RTC encourages the City of Santa Cruz to continue to develop the Coastal Rail Trail Project from Beach Street/Pacific Avenue Roundabout to 17th Avenue and to complete the environmental analysis of the Proposed Project and other project alternatives.

Sincerely,

Guy Preston
Executive Director

SANTA CRUZ COUNTY GROUP
of the Ventana Chapter
P.O. Box 604, Santa Cruz, CA 95061
EMAIL: sierraclubsantacruz@gmail.com
WEB: www.sierraclub.org/ventana/santa-cruz

October 15, 2021

Nathan Nguyen, Project Manager
City of Santa Cruz Public Works Dept.
809 Center Street, Room 201, Santa Cruz CA 95060
nnguyen@cityofsantacruz.com

Re: EIR Scope and Comments for Rail Trail Segments 8 and 9

Dear Nathan Nguyen:

Thank you for the opportunity to comment on the EIR Notice of Preparation (NOP) scoping for Rail Trail Segments 8 and 9. The Sierra Club respectfully requests that the following concerns be included for consideration.

The Regional Transportation Commission has chosen electric light rail transit on the Right of Way (ROW) as the locally preferred alternative in the RTC's Transit Corridor Alternatives Analysis. Therefore, we believe that each proposed alternative should be studied with regard to its possible effects on the construction and implementation of rail transit in Santa Cruz County. We urge the EIR scoping to include this element.

We are particularly concerned that Alternative 1, a railbank with trail along Segment 9, removes the existing tracks and would significantly slow or halt any future rail transit in Santa Cruz County, as the tracks would need to be re-installed to proceed with implementation. The Sierra Club has previously commented in favor of rail transit and its potential to reduce greenhouse gas emissions (GHGs) from automobile congestion and increase transit equity, offering significant benefits to the community. We therefore ask: What would the long-term environmental impacts be of slowing or halting construction of rail transit?

The motion made at the RTC meeting regarding this EIR was that the alternative to the proposed project was to be an "interim trail." However, we do not see that phrase in the NOP, which refers to Alternative 1 only as a "Railbank with Trail." This is concerning. If the alternative is indeed interim, please study potential impacts resulting from the installation of an interim trail, removal of that interim installation and then restoration of the original project. Any proposed track removal should examine the impacts of disturbing the existing rail bed and disposing of exposed hazardous waste, including railroad ties treated with creosote, remaining cinders or ash potentially containing toxic material such as lead or arsenic, and any contaminants on the railbed such as oil, gasoline or solvents. These materials would need careful disposal, with remediation of affected areas.

Development of Segment 9 for rail and trail would involve significant earthmoving and tree removal, notably to widen the existing graded cut from the San Lorenzo River trestle eastward to the south end of Mountain

View Avenue. We believe that a better EIR analysis will result from studying an adequately detailed preliminary design plan including:

- the extent of grading,
- the estimated range of grading cut-and-fill volumes,
- the realignment of rail tracks,
- removal of trees over a specified diameter, and
- identification of possible locations for new plantings of native trees, including those of potential skyline scale.

In addition, environmental benefits of invasive non-native tree removals (such as the acacia trees at the end of Mountain View Avenue), should be evaluated. Scale, materials, and extent of retaining walls and subsequent aesthetic impacts should also be considered.

Biological resource analysis should include bird nesting or roosting in trees to be removed, disturbance of wildlife habitat, and the mitigation of these effects by replacement plantings of native species. Although we recognize that this scoping process involves only a discrete portion of the overall rail project, we continue to have concerns regarding the cumulative and long-term impacts on wildlife and natural habitat of the failure to reduce GHG emissions. Climate destabilization is identified by the Audubon Society as the leading global impact on bird populations and habitat, with GHGs from the transportation sector being a major contributor.

We also ask that the EIR consider the effects of project fencing on wildlife access and movement in natural habitat areas within the project area, and that measures to reduce these impacts be included. Any potential impact of project lighting, whether temporary or permanent, on nocturnal or crepuscular wildlife, and options to limit or minimize the same, should be studied as well.

What impact would each alternative have on coastal access and pedestrian/cyclist access? For examples, we mention the existing informal pedestrian access ways that cross the railroad tracks at the south end of El Dorado Avenue, and the south end of Mountain View Avenue. El Dorado is used by pedestrians to access the upland area of Twin Lakes State Beach, on the north side of Schwan Lake. Mountain View Avenue is popularly used by neighborhood pedestrians, joggers, and dog walkers to continue across Murray St. and down Pilkington Ave. to Tyrell Park, the Natural History Museum, and the ocean bluffs and beach area. Further, this convenient at-grade access point at Mountain View Avenue is potentially linked in the future via a short, low-traffic block of Hiawatha Ave. to a Bicycle Boulevard which the City of Santa Cruz has previously studied for Cayuga Avenue. Would either project alternative completely or partially cut off coastal access points like these from continued use?

Thank you for your consideration of our concerns. We look forward to further community outreach and engagement on the EIR process for this project.

Micah Posner
Chair of Executive Committee
Santa Cruz Sierra Club

October 14, 2021

To: Nathan Nguyen
From: Santa Cruz County Friends of the Rail & Trail
Re: Rail Trail Segments 8 and 9 Project - EIR Scoping

Friends of the Rail and Trail (FORT) has the following comments regarding the scope for the Rail Trail Segments 8 & 9 Project:

1. The "Railbank with Trail" alternative being considered during the EIR should be renamed and analyzed as a "Railbank with INTERIM Trail". As of today, neither the City of Santa Cruz, the Regional Transportation Commission (RTC) nor the County of Santa Cruz has adopted a policy which supports railbanking the Santa Cruz Branch Rail Line (SCBRL), nor a "Railbank with Trail" use of the rail corridor. In fact, the RTC and the City Councils of Santa Cruz and Watsonville have recently adopted resolutions confirming their support for implementing passenger rail transit on the SCBRL. Accordingly, the "railbank with trail" alternative will necessarily be an interim trail use. Please adjust the scope of the subject EIR such that the full environmental impact of an INTERIM trail, including demolition of the existing rail line, handling and disposal of hazardous waste associated with demolishing the existing rail line, implementation of an interim trail, discontinuing the interim trail use, restoring the rail line, and constructing a permanent trail alongside the rail can be fully evaluated and understood by the community and the decision makers.

2. Given that since the legal fiction known as “Railbanking” was created by an Act of Congress in 1983, there has not been one case of railroad tracks being removed, a paved interim trail being constructed where the tracks were, the paved interim trail being removed, the railroad tracks reinstalled and rail transit service resuming operation; the EIR must consider that the Alternative 1: Railbank with Interim Trail Project will, in effect, preclude the rail corridor from being used for rail transit, or any other type of high-capacity public transit in the reasonably foreseeable future and probably forever preclude such use. Accordingly, and as previously documented in the RTC’s *Unified Corridor Investment Study* (UCIS), using the rail corridor for a trail-only, as described in Scenario A, instead of a rail with trail, as described in Scenario B, will have detrimental environmental impacts including, but not limited to:

    - A substantial increase in Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) Emissions
    - A substantial increase in the number of collisions at an annual cost of millions of dollars and immeasurable and avoidable human pain and suffering
    - A substantial decrease in the mode share of people riding bicycles
    - A substantial decrease in the mode share of people using public transit county-wide

3. Using the same logic as described in #2 above, when considering the environmental impacts of an interim trail use that will effectively preclude the SCBRL from being used for rail transit, or any other type of high-capacity public transit in the reasonably foreseeable future and probably forever, the Alternative 1: Railbank with Interim Trail Project will necessarily have to account for all the benefits that would otherwise have accrued had passenger rail transit, as described in the RTC’s *Transit Corridor Alternatives Analysis / Rail Network Integration Study* (TCAA/RNIS), been implemented including, but not limited to:

- A substantial increase in county-wide public transit use from about 5 million to about 12.5 million rides every year

- A substantial decrease in VMT, GHG emissions and criteria pollutants

- A more robust and equitable public transit system serving the people of Santa Cruz County and the State of CA.

- A more complete statewide rail network as delineated in the State Rail Plan (SRP) of which the SCBRL is an integral part

- A more complete Monterey Bay Area Regional Passenger Rail Network as described in the Transit Agency of Monterey County's *Rail Network Integration Study* including but not limited to "Around-the-Bay" passenger rail service linking Santa Cruz with Monterey and all points in between and beyond.

- All the other benefits summarized in Chapter 6 of the TCAA/RNIS

4. When considering the environmental benefits of the Rail with Trail project, and as previously documented in the RTC's *Unified Corridor Investment Study* (UCIS), using the rail corridor for a rail with trail, as described in Scenario B, as opposed to the trail-only use, as described in Scenario A, will have positive environmental impacts including, but not limited to:

   - A substantial decrease in Vehicle Miles Traveled (VMT) and Greenhouse Gas (GHG) Emissions

   - A substantial decrease in the number of collisions with annual savings of millions of dollars and immeasurable reduction of human pain and suffering

   - A substantial increase in the mode share of people riding bicycles

   - A substantial increase in the mode share of people using public transit county-wide

5. When considering the environmental benefits of the Rail with Trail project, please account for all the benefits that will be realized when passenger rail transit as described in the RTC's *Transit Corridor Alternatives Analysis / Rail Network Integration Study* (TCAA/RNIS) is implemented including, but not limited to:

   - A substantial increase in county-wide public transit use from about 5 million to about 12.5 million rides every year.

   - A substantial decrease in VMT, GHG emissions and criteria pollutants.

   - A more robust and equitable public transit system serving the people of Santa Cruz County and the State of CA.

   - A more complete statewide rail network as delineated in the SRP of which the SCBRL is an integral part.

   - A seamless rail-to-rail connection to the state rail network as delineated in the SRP at the Watsonville Junction including, but not limited to, the reduction in automobile trips and VMT by people traveling to and from Santa Cruz County from the rest of California.

- A more complete Monterey Bay Area Regional Passenger Rail Network as described in the Transit Agency of Monterey County's *Rail Network Integration Study* including but not limited to "Around-the-Bay" passenger rail service linking Santa Cruz with Monterey and all points in between and beyond.

- All the other benefits summarized in Chapter 6 of the TCAA/RNIS

6. The proposed project and all alternatives studied should include: impacts on greenhouse gas emissions/ climate change impacts, Transportation/Circulation impacts, and the impact of the release or creation of environmental hazards and hazardous materials.

7. Because the Regional Transportation Commission (RTC) has chosen electric light rail passenger transit on the Branch Line ROW as the locally preferred alternative, the EIR should evaluate the impact each alternative would have on the implementation of this transit service. How would the speed at which our county could implement rail service affect our collective VMT and GHG emissions? What would be the environmental impact of delaying implementation of passenger rail transit for 20 years, 30 years, 40 years, permanently, on the Santa Cruz county community, on our region, on our state? What would be the positive environmental impact if the proposed project: rail with trail encourages more people to take transit?

8. The proposed project and the alternative 1 project do not appear to be fully defined at this time. If Alternative 1: Railbank with Interim Trail does not substantially conform with the "Trail Only" use as described in Appendix B, Table B-13: Trail Only of the UCIS in terms of width and length, an additional alternative must be considered which does substantially conform with the "Trail-Only" use of the corridor as described in Appendix B, Table B-13: Trail Only of the UCIS.

9. Given the incremental nature of the proposed rail with trail project and the alternative trail-only project(s) the environmental impacts of realizing the total and full implementation of these projects must be considered i.e. in the case of the trail-only alternative, the environmental impacts of eventually converting the entire SCBRL to a railbank with interim trail project should be considered, especially the impacts of converting the portion of the SCBRL that passes through the sloughs and wetlands of the Pajaro Valley.

Thank you for your consideration,

Faina Segal
Board Chair
Santa Cruz County Friends of the Rail & Trail

From: amelia conlen <conlen.ameliawren@gmail.com>
Sent: Sunday, October 17, 2021 7:57 PM
To: Nathan Nguyen
Subject: Comments on Segment 8 EIR Scope

Hi Nathan,

First of all - it was great to catch up last week! It was so good to see all of your faces.

I wanted to send an official comment on Segment 8 for your consideration - do with it what you will :)

I avoid riding Segment 8 during summer weekends because of the amount of pedestrian traffic in the bike lane. Visitors often don't know they're in a bike lane and there are too many obstacles to dodge to make for a comfortable ride.

Clearly the sidewalk needs to be wider, but I'd like to suggest swapping the location of the bike lane and the sidewalk. This is only needed where there is on-street parking, in the section between the parking lot entrance at 515 Beach and the trestle bridge. This would solve several issues:

-
- The majority of pedestrians in this stretch are traveling between their cars and the boardwalk entrance. People tend to follow the path of least resistance, and I don't think its realistic to expect that everyone will cross the bike lane to reach the sidewalk.
- The current design requires that pedestrians cross the bike lane to reach the parking meters, which creates obstacles for cyclists.
- The current design leads to car doors opening into the bike lane and people unloading stuff from their cars into the bike lane.
- There are lots of people with strollers, coolers on wheels, or carts filled with beach stuff. It is much easier for those folks to walk in the bike lane than it is to get their wheeled devices up onto the sidewalk. A sidewalk next to parked cars would also increase accessibility for people in wheelchairs.

It would be important to clearly delineate between the ped/bike areas, with colored pavement or pavement markings. This could also be accomplished through a slight grade separation.The University of Washington has done a nice job with this in the section of the Burke Gilman Trail that runs through the UW campus. This area has lots of bike/ped traffic - it would be interesting to give someone there a call to confirm how its working. Here are some images: https://place.la/project/burke-gilman/ /// https://facilities.uw.edu/blog/files/trail-demojpg

Hope this is helpful. Thanks for everything you're doing.

Amelia Conlen (Ryland weighed in too)

From: Brian Peoples [mailto:brian@trailnow.org]
Sent: Saturday, September 18, 2021 4:59 AM
To: Nathan Nguyen <nnguyen@cityofsantacruz.com>
Cc: Matt Machado <Matt.Machado@santacruzcounty.us>; Guy Preston <gpreston@sccrtc.org>; Sarah Christensen <schristensen@sccrtc.org>; Shannon Munz <smunz@sccrtc.org>; Bruce McPherson <Bruce.McPherson@santacruzcounty.us>; Gine Johnson <Gine.Johnson@santacruzcounty.us>; Manu Koenig <manu.koenig@santacruzcounty.us>; rpquinn@pacbell.net; rlj12@comcast.net; Steve Wiesner <Steve.Wiesner@santacruzcounty.us>; Sandy Brown <sbrown@cityofsantacruz.com>; eduardo.montesino@cityofwatsonville.org; 'jimmy.dutra@cityofwatsonville.org' <jimmy.dutra@cityofwatsonville.org>; openup@cats.ucsc.edu; jacques.bertrand@sbcglobal.net; ladykpetersen@gmail.com; Andy Schiffrin <Andy.Schiffrin@santacruzcounty.us>
Subject: Re: NOTICE OF PREPARATION OF AN EIR AND SCOPE MEETING - Rail Trail Segments 8 and 9

Hi Nathan,

Thank you for the additional information. Great to see you are including railbanking as part of the analysis.

However, we would suggest that the Boardwalk Trestle be part of Segment 9 - and be included in the railbanking analysis. Not using the Boardwalk Trestle for the trail will be a significant deficiency in the trail design. We believe that the RTC needs to address the current situation where Roaring Camp is parking their big train on the Boardwalk Trestle without written approval. Allowing a private company to block the taxpayer-owned transit corridor is unacceptable.

Anyway, appreciate your work and we will help get the word out on your EIR review.

Best regards,

Brian Peoples
Trail Now

From: Nathan Nguyen <nnguyen@cityofsantacruz.com>
Sent: Friday, September 17, 2021 11:16 AM
To: Brian Peoples <brian@trailnow.org>
Cc: Matt Machado <Matt.Machado@santacruzcounty.us>; Guy Preston <gpreston@sccrtc.org>; Sarah Christensen <schristensen@sccrtc.org>; Shannon Munz <smunz@sccrtc.org>; Bruce McPherson <Bruce.McPherson@santacruzcounty.us>; Gine Johnson <Gine.Johnson@santacruzcounty.us>; Manu Koenig <manu.koenig@santacruzcounty.us>; rpquinn@pacbell.net <rpquinn@pacbell.net>; rlj12@comcast.net <rlj12@comcast.net>; Steve Wiesner <Steve.Wiesner@santacruzcounty.us>; Sandy Brown <sbrown@cityofsantacruz.com>; eduardo.montesino@cityofwatsonville.org <eduardo.montesino@cityofwatsonville.org>; 'jimmy.dutra@cityofwatsonville.org' <jimmy.dutra@cityofwatsonville.org>; openup@cats.ucsc.edu <openup@cats.ucsc.edu>; jacques.bertrand@sbcglobal.net <jacques.bertrand@sbcglobal.net>; ladykpetersen@gmail.com <ladykpetersen@gmail.com>
Subject: RE: NOTICE OF PREPARATION OF AN EIR AND SCOPE MEETING - Rail Trail Segments 8 and 9

Brian,

See attached. The EIR will include analysis of *Rail with Trail* and *Railbank with Trail.* It will evaluate potential environmental issues and alternatives and not the project design itself. As schematic plans are developed over the next 4-6 months they will be brought to the governing bodies and the public for review and direction.

Best,

Nathan N. Nguyen, P.E.
City of Santa Cruz
Public Works Dept.
(831) 420-5188

From: Brian Peoples [mailto:brian@trailnow.org]
Sent: Wednesday, September 15, 2021 5:55 AM
To: Nathan Nguyen <nnguyen@cityofsantacruz.com>
Cc: Matt Machado <Matt.Machado@santacruzcounty.us>; Guy Preston <gpreston@sccrtc.org>; Sarah Christensen <schristensen@sccrtc.org>; Shannon Munz <smunz@sccrtc.org>; Bruce McPherson <Bruce.McPherson@santacruzcounty.us>; Gine Johnson <Gine.Johnson@santacruzcounty.us>; Manu Koenig <manu.koenig@santacruzcounty.us>; rpquinn@pacbell.net; rlj12@comcast.net; Steve Wiesner <Steve.Wiesner@santacruzcounty.us>; Sandy Brown <sbrown@cityofsantacruz.com>; eduardo.montesino@cityofwatsonville.org; 'jimmy.dutra@cityofwatsonville.org' <jimmy.dutra@cityofwatsonville.org>; openup@cats.ucsc.edu; jacques.bertrand@sbcglobal.net; ladykpetersen@gmail.com
Subject: Re: NOTICE OF PREPARATION OF AN EIR AND SCOPE MEETING - Rail Trail Segments 8 and 9

Hi Nathan,

Thank you for sending this information to us. We think it is good you are doing the outreach and EIR - anything to get the project completed sooner. We will help communicate your efforts to the community, but first have some questions related to the EIR and design.

Is this EIR for the rail & trail design?

If it is for rail & trail, does it have the elevated trail platform? FYI - We strongly oppose the elevated platform trail and do not believe it will ever be necessary now that the RTC has voted not to move forward with rail. Our expectation is that the RTC will move forward with railbanking in the coming months and construction of the interim Coastal Trail - which is removal of all rails and ties from Watsonville to Davenport. Moving forward with railbanking and construction of the interim Coastal Trail will eliminate the need for the construction of Segments 8 and 9 elevated platform trail.

Will the EIR for the current rail & trail design suffice the requirements for the future trail built on the railroad bed?

In other words, will the EIR for current elevated platform trail meet planning requirements if the final approved design is not to have the elevated platform trail?

Best regards,

Brian Peoples
Trail Now

From: Jane Mio <jmio@earthlink.net>
Sent: Friday, October 15, 2021 1:57 PM
To: Nathan Nguyen
Subject: EIR Rail Trail Segments 8

To Nathan Nguyen, P.E., Project Manager,

After attending the 10/6 the public scoping meeting for EIR of RAI Trail Segment 8 & 9, I like to present the following comments.

Segment 8 is rich with big, mature trees, which provide bird nesting locations, food source to Monarch, other Butterflies species, local & migratory birds. These trees are frequented by Hawks & Falcons, who require high perches for their hunting style.

Mature tree canopy provide shade, which lowers the temperature in the adjacent vicinity, while also sequestering Carbon Dioxide & releasing oxygen.

The City of Santa Cruz is committed to promoting a healthy and livable community; restoration and protection of its urban forest is a crucial part of this pledge.

This Commitment to the Santa Cruz community is carried by
City's General Plan: calls for protection and management of urban tree resources, maintaining and adding to the urban tree canopy.
City's Climate Action Plan: identifies "increase and enhance the urban forest" and "increase tree canopy coverage 10% from 2008 by 2020" as significant, short term goals.
City's Stormwater Management Plan: recognizes the value of the urban forest along medians and streets for reducing sediment input to waterways and supporting Total Maximum Daily Load goals.
Health in All Policies: requires that all City ordinances, Plans, Programs are based on providing the Santa Cruz community a healthy & livable environment.
Heritage Tree ordinance 2013-18: protects trees as a community asset of substantial environmental, aesthetic and economic importance.

In view of the above listed rationales the Segment 8 EIR has to address & evaluate the Project's impacts according to the City's Plans, Policies & Ordinances in order to fulfill the City' commitment to the community. The Segment 8 EIR also has to list alternatives to avoid tree removal in that section.

From: pjlsb@att.net
To: Nathan Nguyen; Brian Peoples
Cc: Matt Machado; Guy Preston; Sarah Christensen; Shannon Munz; Bruce McPherson; Gine Johnson; Manu Koenig; rpquinn@pacbell.net; rlj12@comcast.net; Steve Wiesner; Sandy Brown; eduardo.montesino@cityofwatsonville.org; "jimmy.dutra@cityofwatsonville.org"; openup@cats.ucsc.edu; jacques.bertrand@sbcglobal.net; ladykpetersen@gmail.com
Subject: Re: NOTICE OF PREPARATION OF AN EIR AND SCOPE MEETING - Rail Trail Segments 8 and 9
Date: Wednesday, September 15, 2021 9:46:46 AM
Attachments: image002.jpg

I agree with Brian Peoples and Trail Now. Additionally, studies of the removal of the steel rails, BUT leaving the creosote/arsenic laced wooden ties should be considered, rather than removal of the ties. Separate remediation of different scenarios: 1)rail ties removal; 2)rail ties undisturbed; 3) rail ties capsuled to contain hazardous materials.
Respectfully,
Peter Stanger
19 Escuela Road, Watsonville, CA 95076

On Wednesday, September 15, 2021, 05:54:57 AM PDT, Brian Peoples <brian@trailnow.org> wrote:

Hi Nathan,

Thank you for sending this information to us. We think it is good you are doing the outreach and EIR - anything to get the project completed sooner. We will help communicate your efforts to the community, but first have some questions related to the EIR and design.

Is this EIR for the rail & trail design?

If it is for rail & trail, does it have the elevated trail platform? FYI - We strongly oppose the elevated platform trail and do not believe it will ever be necessary now that the RTC has voted not to move forward with rail. Our expectation is that the RTC will move forward with railbanking in the coming months and construction of the interim Coastal Trail - which is removal of all rails and ties from Watsonville to Davenport. Moving forward with railbanking and construction of the interim Coastal Trail will eliminate the need for the construction of Segments 8 and 9 elevated platform trail.

Will the EIR for the current rail & trail design suffice the requirements for the future trail built on the railroad bed?

In other words, will the EIR for current elevated platform trail meet planning requirements if the final approved design is not to have the elevated platform trail?

Best regards,

Brian Peoples
Trail Now

From: Nathan Nguyen <nnguyen@cityofsantacruz.com>
Sent: Tuesday, September 14, 2021 5:00 PM
Cc: Nathan Nguyen <nnguyen@cityofsantacruz.com>
Subject: NOTICE OF PREPARATION OF AN EIR AND SCOPE MEETING - Rail Trail Segments 8 and 9

NOTICE OF PREPARATION OF AN EIR AND SCOPING MEETING
Rail Trail Segments 8 and 9

The City of Santa Cruz is preparing an Environmental Impact Report (EIR) and hosting a public scoping meeting on the project described herein. The focus of this notice and the scoping meeting is specifically to gather input on potential environmental issues and project alternatives to be evaluated in the environmental review process, not the merits of the project itself or the project design. There will be future opportunities for community input on the schematic plans. Responses are due within 30 days of the receipt of this Notice, as provided by State law, and thus should be received no later than **Friday, October 15, 2021, 4:00 PM**.

Webpage http://www.cityofsantacruz.com/railtrail89 or Nathan Nguyen, P.E., Project Manager City of Santa Cruz Public Works Department, 809 Center Street, Room 201, Santa Cruz, CA 95060, nnguyen@citysantacruz.com. To ensure email receipt of your comment/question, please use the following subject line: "RAIL TRAIL 8/9"

The EIR Scoping Meeting date, time, and location as indicated below is to gather additional input on the scope of the EIR analysis.

Wednesday, October 6, 2021, 5:00-6:30 PM
Zoom Webinar Link: https://rrmdesign.zoom.us/j/87554617851
Zoom Webinar ID: 875 5461 7851
Call-in Options via Telephone: +1 669 900 6833 or +1 408 638 0968

Project Location and Description: The Rail Trail Segments 8 and 9 Project is a 2.2-mile bicycle and pedestrian system that extends along the Santa Cruz Branch Rail Line (SCBRL) corridor, from the Beach Street/Pacific Avenue Roundabout on the west to the eastern side of 17th Avenue on the east. Segment 8 (0.6 mile) is comprised of a Class IV on street bicycle system and pedestrian sidewalk improvements. Segment 9 (1.6 miles) is comprised of a multi-use bicycle and pedestrian trail.

Appendix C.

Initial Study for Coastal Rail Trail Segments 8 and 9

This page intentionally left blank.

Initial Study

Coastal Rail Trail Segments 8 and 9

November 2021

Prepared for:

City of Santa Cruz
809 Center Street, Room 201
Santa Cruz, California 95060

Prepared by:

450 Lincoln Avenue, Suite 103
Salinas, California 93901

Rincon Consultants

Monterey, California

EcoSystems West Consulting

Santa Cruz, California

Document Overview

This Initial Study has been prepared in accordance with California Environmental Quality Act (CEQA) and the CEQA Guidelines for the proposed Coastal Rail Trail Segments 8 and 9 Project (project).

In accordance with CEQA, projects that have the potential to result in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment must undergo analysis to disclose potential significant effects. The provisions of CEQA apply to California governmental agencies at all levels, including local agencies, regional agencies, state agencies, boards, commissions, and special districts. CEQA requires preparation of an Initial Study for a discretionary project to determine the range of potential environmental impacts of that project and to define the scope of the environment review document.

Therefore, the primary intent of an Initial Study is to determine if the project may have a significant effect on the environment. However, if the Lead Agency can determine that an EIR will clearly be required for the project, an Initial Study is not required but may still be desirable.

As the CEQA lead agency for the project, the City of Santa Cruz (City) decided to prepare an EIR to provide a more robust analysis and public involvement process. Therefore, the purpose of this Initial Study is to identify the effects determined not to be significant and to focus the EIR analysis on the effects determined to be potentially significant. Because the City is preparing an EIR for the project, this Initial Study has not been circulated for public review and will not be certified by the City. The full citations for references contained herein can be found in the Coastal Rail Trail Segments 8 and 9 Draft EIR (September 2022).

This Initial Study is organized as follows:

- **Section 1: Project Description.** This section introduces the document and discusses the project description including location, setting, and specifics of the lead agency and contacts.
- **Section 2: Initial Study Checklist.** This section identifies the environmental topics, checklist questions from Appendix G of the State CEQA Guidelines, and identifies the potential for significant impacts based on identified thresholds.

Section 1 Project Description

1.1 Project Overview and Location

The **Coastal Rail Trail Segments 8 and 9 Project** includes a 2.2-mile bicycle and pedestrian trail that extends along the Santa Cruz Branch Rail Line (SCBRL) corridor. The trail extends from the Beach Street/Pacific Avenue Roundabout in the City of Santa Cruz on the west end to the eastern side of 17th Avenue in the unincorporated Live Oak area of Santa Cruz County on the east end, excluding the recently constructed San Lorenzo River Trestle Bridge Improvements (**Figure 1**).

1.2 Project Background

The project is part of the larger Monterey Bay Sanctuary Scenic Trail (MBSST) Network, for which a Master Plan was adopted and a programmatic EIR was certified in 2013 by the Santa Cruz County Regional Transportation Commission (RTC). In 2014, the RTC made minor revisions to the Master Plan and prepared an EIR addendum. The Master Plan was prepared to establish a continuous alignment, including a bicycle and pedestrian trail along the RTC-owned SCBRL, for the length of Santa Cruz County.

1.3 Trail Alignment

The **Coastal Rail Trail Segments 8 and 9 Project** (project) includes a 2.2-mile bicycle and pedestrian system from the Beach Street/Pacific Avenue Roundabout on the west to the eastern side of 17th Avenue on the east (**Figure 1**). Segment 8 (0.6 mile) is comprised of a Class IV on street bicycle system and pedestrian sidewalk improvements. Segment 9 (1.6 miles) is comprised of a multi-use bicycle and pedestrian trail. The Project purpose is to provide an accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the existing rail corridor, consistent with the MBSST Network Master Plan.

The City is evaluating the proposed project, called *Trail next to Rail line (Ultimate Trail Configuration)*, whereby the trail would be adjacent to the existing tracks. Additionally, the City is considering an optional first phase, called *Trail on the Rail line (Interim Trail)*, whereby the existing tracks would be removed and replaced by the trail.

The "project area" for both trail alignments is the RTC-owned SCBRL corridor.

1.3.1 Proposed Project: Trail next to Rail Line (Ultimate Trail Configuration)

For Segment 8, between the Pacific Avenue/Beach Street Roundabout and the existing ramp to the San Lorenzo River Trestle Trail, the Project generally includes improvements to the existing Class IV Cycle Track for bicycles and sidewalk for pedestrians that extend along Beach Street, adjacent to the Santa Cruz Beach Boardwalk amusement park. The remaining portion of Segment 8 along the San

Lorenzo River Trestle Bridge (SLR Trestle Bridge) was constructed in 2019, is 10-feet-wide, and requires no improvements.

For Segment 9, from the east side of the SLR Trestle Bridge to the east side of 17th Avenue, the new multi-use bicycle/pedestrian trail would continue along the inland side of the tracks, until just past El Dorado Avenue where it crosses to the coastal side of the tracks near the eastern end (connecting trail users to Simpkins Swim Center and Twin Lakes State Park). The typical width of the paved trail would be 12 feet with striping in the middle to separate eastbound and westbound. The trail width would be reduced to between 9 feet, 6 inches and 10 feet wide at roadway and waterway crossings.

The Project's structures generally include retaining walls along portions requiring support; clear span bridges or pier supported lightweight trail decks over Pilkington Creek, Leona Creek, and Stream 1545; a lightweight bridge cantilevered off the existing railroad bridge over the Santa Cruz Harbor; and potentially a ramp structure from the new trail to the East Harbor Trail.

The new trail alignment crosses four public roadways at Mott Avenue, Seabright Avenue, 7th Avenue, and 17th Avenue. Each crossing will have some level of roadway, signing, and striping improvements with CPUC approval via a GO 88-B permit[1] for Seabright, 7th, and 17th Avenues.

Finally, the Project generally includes widening and restriping Murray Street to accommodate the addition of a westbound right turn lane, in association with the introduction of the new trail crossing at Seabright Avenue, for safety.

1.3.2 Optional First Phase: Trail on the Rail Line (Interim Trail)

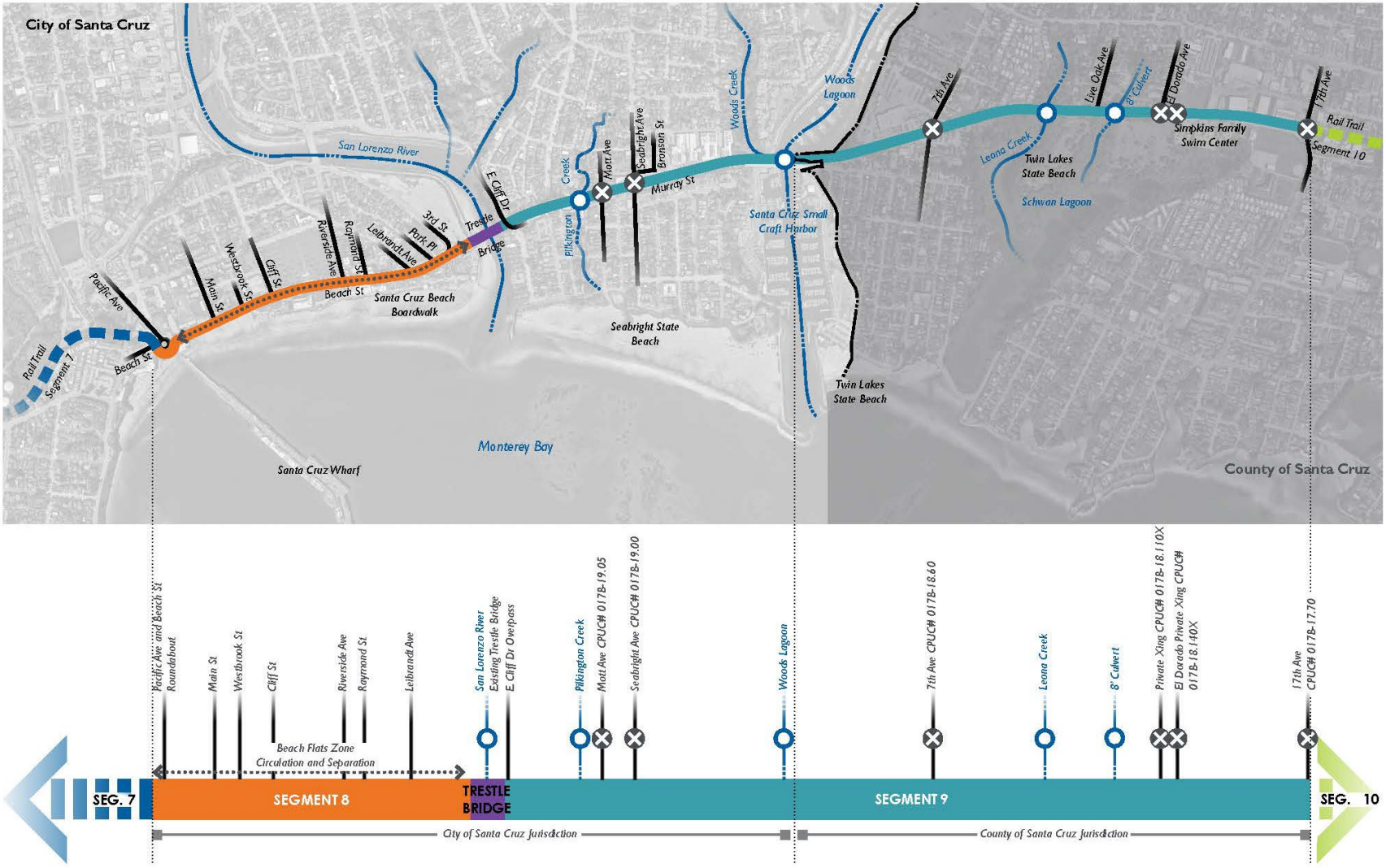
The City is considering an optional interim phase of the Project.

The Segment 8 portion of the trail, from the Beach Street/Pacific Avenue Roundabout to across the SLR Trestle Bridge, would be the same as described above for the Ultimate Trail Configuration.

For Segment 9, from the east side of the SLR Trestle Bridge to the east side of 17th Avenue, the multi-use trail would be located on the rail line. This optional interim phase includes three parts: (1) implementation of the Interim Trail, which includes removal of the rail and construction of the trail on the rail line; (2) demolition of the Interim Trail and rebuilding the rail line; and (3) construction of the Ultimate Trail Configuration alongside the rail.

[1] Commission General Order 88-B Modification of an Existing Rail Crossing (GO 88-B) provides a process for CPUC staff authorization of rail crossing modifications that meet the applicable criteria (https://www.cpuc.ca.gov/industries-and-topics/rail-safety/rail-crossings-and-engineering/go-88-b-modification-of-an-existing-rail-crossing#:~:text=Commission%20General%20Order%2088%2DB,to%20the%20Formal%20Application%20process).

Figure 1. Coastal Rail Trail Segments 8 and 9 Project Location Map



Section 2 Initial Study Checklist

The following discussion of potential environmental effects was completed in accordance with Section 15063 of the CEQA Guidelines to determine if the proposed project may have a significant effect on the environment.

2.1 Project Information

1. Project title:	Coastal Rail Trail Segments 8 and 9
2. Lead agency name and address:	City of Santa Cruz City of Santa Cruz, Public Works Department 809 Center Street, Room 201 Santa Cruz, CA 95060
3. Contact person name, address, and phone number:	Nathan Nguyen, P.E., Project Manager City of Santa Cruz, Public Works Department 809 Center Street, Room 201 Santa Cruz, CA 95060 nnguyen@citysantacruz.com
4. Project location:	The 2.2-mile-long linear Project is located along the existing rail corridor. It is within the City of Santa Cruz limits, from the Pacific Avenue/Beach Street roundabout on the west end, to the Santa Cruz Harbor. It is within unincorporated County of Santa Cruz, from the Santa Cruz Harbor to the east side of 17th Avenue on the east end.
5 Project sponsor's name and address:	City of Santa Cruz, Public Works Department 809 Center Street, Room 201 Santa Cruz, CA 95060
6. General plan designation:	City of Santa Cruz General Plan (2030): Regional Visitor Commercial; Natural Areas; Low Medium Density Residential; Neighborhood Commercial; Industrial; Coastal Dependent; Community Facilities; Community Commercial; High Density Residential.

	County of Santa Cruz General Plan (1994): Parks and Recreation; Urban Low Residential; Urban Open Space; Commercial Service; Public Facilities;
7. Zoning:	City of Santa Cruz Municipal Code: Beach Commercial Multiple Residence Low Rise Neighborhood Commercial and Coastal Dependent Related County of Santa Cruz: Professional Administrative Office; Single Family Residential; Multi-Family Residential; Community Commercial; Parks, Recreation and Open Space; Public and Community Facilities; Light Industrial.
8. Description of project:	Refer to Section 1 of this Initial Study.
9. Surrounding land uses and setting:	Refer to Section 1 of this Initial Study.
10. Other public agencies whose approval is required:	County of Santa Cruz, Santa Cruz County Regional Transportation Commission, California Department of Transportation (Caltrans), California Public Utilities Commission, California State Water Resources Control Board, Regional Water Quality Control Board, California Department of Fish and Wildlife
11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?	No consultation has been requested. Refer to Section 2.4.18, Tribal Cultural Resources, of this Initial Study for details.

2.2 Environmental Factors Potentially Affected

The environmental factors checked below could be potentially affected by the project, involving at least one impact that is a "Potentially Significant Impact" or "Less than Significant with Mitigation" as indicated by the checklist on the following pages.

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

2.3 Lead Agency 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 (state), including implementation of the mitigation measures identified herein. 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.

Signature
Nathan Nguyen, P.E., Project Manager
City of Santa Cruz, Public Works Department

Date

2.4 Evaluation of Environmental Impacts

This section documents the screening process used to identify and focus on environmental impacts that could result from the project. The checklist portion of the Initial Study begins below and includes explanations of each CEQA issue topic. CEQA requires that an explanation of all answers be provided along with this checklist, including a discussion of ways to mitigate any significant effects identified.

The following terminology is used to describe the potential level of significance of impacts:

- **No Impact.** The analysis concludes that the project would not affect the particular resource in any way.
- **Less than Significant.** The analysis concludes that the project would not cause substantial adverse change to the environment without the incorporation of mitigation.
- **Less than Significant with Mitigation Incorporated**. The analysis concludes that it would not cause substantial adverse change to the environment with the inclusion of mitigation agreed upon by the applicant.
- **Potentially Significant.** The analysis concludes that the project could result a substantial adverse effect or significant effect on the environment, even if mitigation is incorporated. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

Because the City has decided to prepare an EIR, the detailed analyses providing substantial evidence and identifying required mitigation will be included in the EIR. Accordingly, the discussions may indicate that mitigation is likely required to reduce an impact to a less than significant level, without identifying the specific mitigation measure.

The terms "project", "trail alignment", and "project impacts" are used when talking about the Coastal Rail Trail Segments 8 and 9 project in general, regardless of the Ultimate Trail Configuration or the optional Interim Trail alignment.

The discussions apply to both of the following trail alignments and distinguish between the two alignments as necessary to describe notable differences in the potential impacts.

- Proposed project: *Trail next to Rail line (Ultimate Trail Configuration)*, whereby the trail would be adjacent to the existing tracks

- Optional first interim phase: *Trail on the Rail line (Interim Trail)*, whereby the existing tracks would be removed and replaced by the trail, and the Ultimate Trail Configuration would be constructed at a future point in time.

The "project area" or area of potential effect (APE) for both trail alignments is 2.2 linear miles of the RTC-owned SCBRL corridor, from the Pacific Avenue/Beach Street roundabout on the west to 17th Avenue on the east (**Figure 1**).

2.4.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 that would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Environmental Setting

The project is part of the central reach portion of the Monterey Bay Sanctuary Scenic Trail Network. The central reach portion is visually characterized by densely populated coastal urban areas with views of the coast, waterways, residential, and commercial areas. As the trail alignments run adjacent to existing roadways, adjacent urban lighting from roadways and crossings illuminate portions of the trail alignments.

There are no designated state scenic highways near either trail alignment. The nearest eligible state scenic highway is Highway 1, approximately 0.86 mile northwest of the beginning of Segment 8 (California Department of Transportation [Caltrans] 2018). None of the roadways designated by the County of Santa Cruz as scenic are in the vicinity of the trail alignments. The City of Santa Cruz has not designated additional local roadways near the trail alignments as scenic. However, the City has identified the Santa Cruz Beach Boardwalk, the beach, the Pacific Ocean, the San Lorenzo River, the Santa Cruz Mountains, and the Santa Cruz Small Craft Harbor as visual landmarks that contribute significantly to the City's visual character (City of Santa Cruz 2011). The County of Santa Cruz additionally identifies ocean vistas, open beaches, wooded forests, open meadows, and mountain hillside views as visual resources to be protected (County of Santa Cruz 1994).

The trail alignment would both pass directly adjacent to the Santa Cruz Beach Boardwalk. Trail users would experience views of the Pacific Ocean and the San Lorenzo River at the end of Segment 8, and views of the Santa Cruz Small Craft Harbor and Twin Lakes State Beach Park along Segment 9.

Impact Analysis

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is a view that possesses visual and aesthetic qualities of high value to the community. In this context, prominent scenic views are those oriented the Pacific Ocean or toward the Santa Cruz Mountains (City of Santa Cruz 2011; County of Santa Cruz 1994). The trail alignment would run adjacent to several features identified as significant contributors to the aesthetic and visual character of the project area including the Santa Cruz Beach Boardwalk, the San Lorenzo River, and views of Main beach and the Pacific Ocean. Because Segment 8 would be part of an existing Class IV bike lane, Segment 8 of the trail alignments would not be expected to have a substantial adverse effect on scenic vistas. However, Segment 9 would include a retaining wall extending from SLR Trestle Bridge to Pilkington Creek, but the size and dimension is not known at this time. It could block scenic views of the San Lorenzo River from public walkways and roadways, depending on the design and size of the retaining wall. Further, trail construction could require tree removal which could substantially alter views and scenic vistas. Therefore, the project could have a substantial adverse effect on a scenic vista and thus a **potentially significant impact** for purposes of this initial study. This issue will be analyzed further in the EIR.

b. Would the project substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The trail alignment would be located over half a mile from Highway 1, the nearest eligible state scenic highway; and views of the trail would not be visible from the Highway. Therefore, the project would not damage scenic resources within a state scenic highway, and there would be **no impact**.

c. Would the project, 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?

The trail would be located in an urbanized area. Neither trail alignment would conflict with applicable zoning or other regulations governing scenic quality, as discussed in Chapter 13.10 of the Santa Cruz County Code and Chapter 24.12 of the City of Santa Cruz Municipal Code related to visual character as the trail alignments would be required to undergo design review to ensure the visual character of the area would not be degraded. All of Segment 8 and a portion of Segment 9 would be required to undergo design review, as stated in the City of Santa Cruz Municipal Code Section 24.08.410, for potential conflict with applicable zoning and other regulations governing scenic quality in the City. The portion of Segment 9 located in the County of Santa Cruz would be required to undergo design review as stated in Santa Cruz County Code Chapter 13.11, which would ensure the trail alignments would preserve and enhance the visual character of the County. Therefore, potential project impacts due to conflict with applicable zoning and other regulations governing scenic quality would be **less than significant**.

d. Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Segments 8 and 9 would be built in a predominately urbanized area which has existing street lighting and light emitted from existing buildings. The project could include new lighting sources for the safety of trail users. Specific locations have not been determined at this time, but could include the beginning of Segment 9, where it extends from the SLR Trestle Bridge and under East Cliff Drive, and over the Santa Cruz Small Craft Harbor. The lighting could be similar to the lighting along SLR Trestle Bridge, which is located under the handrail approximately 3 feet from the ground and is classified as low impact lighting.

Any new lighting would be required to adhere to applicable lighting regulations in City and County codes. Santa Cruz County Code Section 13.11.074(D) includes lighting design requirements for site and building design and Section 9.70.320, which includes lighting requirements related to street and road safety. The City of Santa Cruz Municipal Code Section 24.12.280(8) includes lighting criteria, which states that lighting shall be directed onto the subject property only and shielded so the light source is not visible from adjacent properties or streets. These criteria would reduce lighting impacts associated with potential lighting added to portions of the trail alignments in the City.

The project would not include any elements with high reflective qualities that would increase daytime or nighttime glare. Because the specific details for proposed lighting are unknown at this time, the project is considered to have a potentially significant impact from potential lighting that could be reduced to a **less than significant level with mitigation**. This issue will be analyzed further in the EIR.

2.4.2 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 Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The California Department of Conservation Farmland Mapping and Monitoring Program (FMMP) has mapped the project area as Urban and Build-Up Land. The Urban and Build-Up Land classification is defined as "land that is occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel" (California Department of Conservation 2014). The project area does not contain any parcels that are under a Williamson Act contract (California Department of Conservation 2016). Additionally, the project area is not zoned for agricultural use or timberland use, and no forest land or resources have been identified within the Santa Cruz General Plan 2030.

Impact Analysis

a. Would the project 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?

The project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The project area is classified as Urban and Build-Up Land, pursuant to the California Department of Conservation Farmland Mapping and Monitoring Program map. Therefore, there would be **no impact** to any farmland resources.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The project is not zoned for agricultural use and does not conflict with any Williamson Act contracts. Therefore, there would be **no impact**.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

The project area is located in a completely urban environment, and is zoned Beach Commercial, Single Family Residence, and Coastal Dependent Related. Therefore, the project would not conflict with existing zoning for forest land, timberland, or timberland production and there is **no impact**.

e. Would the project 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?

The project would not involve any changes to the existing environment that would impact the conversion of Farmland or forest land to non-agriculture or non-forest use. The project includes minimal ground disturbance to the existing environment to install the trail, which is already heavily urban. Additionally, the project would not induce population growth, thus no impacts would occur by converting land to non-agricultural or non-forest use. Therefore, there is **no impact**.

2.4.3 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐

Environmental Setting

The project area is located within the North Central Coast Air Basin (NCCAB), which includes the City and County, and within the jurisdiction of the Monterey Bay Air Resources District (MBARD). Air quality standards have been set by the State of California and the federal government, and within the NCCAB include ambient air quality standards for ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter (PM10, PM2.5), and lead (Pb). As of January 2013, the NCCAB is under nonattainment status for ozone and PM10 and under attainment for PM 2.5, NO2, SO2, and Pb for State standards.

The primary sources of ozone (ROG) within the air basin are on- and off-road motor vehicles and prescribed burning. The primary sources of NO_x are on- and off-road motor vehicles and stationary source fuel combustion. In addition, the region is "NO_x sensitive," meaning that ozone formation due to local emissions is more limited by the availability of NO_x as opposed to the availability of ROGs (MBARD 2017). PM_{10} is the other major pollutant of concern for the NCCAB. In the NCCAB, the highest particulate levels and most frequent violations occur in the coastal corridor. In this area, fugitive dust from various geological and human-made sources combines to exceed the standard. The majority of NCCAB exceedances occur at coastal sites, where sea salt is often the main factor causing exceedance.

Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

In compliance with the California Clean Air Act (CCAA), MBARD prepared an Air Quality Management Plan (AQMP) in 1991, with subsequent updates every 3 years to show how the state

ambient air quality standards would be met in the NCCAB. The NCCAB does not meet state standards for ozone (reactive organic gases [ROGs] and nitrogen oxides [NO_x]) and fine particulate matter (PM_{10}).

The MBARD AQMP includes an emission inventory with general estimated basin-wide construction-related emissions, which are not expected to prevent long-term attainment or maintenance of the ozone and particulate matter standards within the NCCAB. The construction activities required for constructing the Coastal Rail Trail Segments 8 and 9 would result in short-term emissions generated by activities and equipment and would not require unusual construction practices or intensities. After the completion of construction, the project would not generate any new pollution or result in an increase in emissions. Therefore, temporary construction impacts related to air quality plans for these pollutants from the project would be less than significant.

The project does not propose any new development or growth that would conflict with vehicle miles traveled (VMT) and emissions assumptions of the MBARD AQMP. Rather, the project would support increased sustainability in modes of transportation and would not impact planned growth. The goal of the rail would be to reduce VMT and expand use of alternative modes of transportation (i.e., bicycle), and in turn reduce regional criteria pollutant emissions.

The project is anticipated to be a net benefit to air quality in the NCCAB and is consistent with the MBARD AQMP. Therefore, impacts to regional air quality due to construction associated with implementing the project would not result in obstructing the MBARD air quality management plan, therefore impacts would be **less than significant**.

b. Would the project 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)?

The U.S. Environmental Protection Agency (USEPA) has classified air basins as being in 'attainment', 'non-attainment', or 'unclassified' for each criteria air pollutant (described above in the Environmental Setting section). As stated above, the project is located within the North Central Coast Air Basin (NCCAB), which is currently in 'non-attainment status' for not meeting state standards for ozone (ROGs and NO_x) and PM_{10}. Therefore, the regional pollutants of concern that would be emitted by the project are ozone precursors and PM_{10}.

Implementation of the project requires construction activities and equipment, which would result in temporary air quality impacts. Short term emissions associated with construction activities and operation of equipment are finite and include fugitive dust, grading and equipment exhaust, and hauling materials to and from the site.

Construction of the trail along Segment 8 would not require significant construction equipment, because trail users would use the existing Class IV bike path and sidewalk, which would be improved

but require relatively minor construction activities. The trail alignment along Segment 9 would use typical construction equipment, such as dump trucks, scrapers, bulldozers, compactors, and front-end loaders.

This equipment would temporarily emit precursors of ozone (i.e., ROG or NO_x) during project construction. Construction activities and equipment would result in localized exhaust emissions. However, these emissions would be temporary in nature and would be reduced to a less than significant with mitigation incorporated, such as implementing MBARD's recommended construction best management practices (BMPs), which include: Prohibit all grading activities during periods of high wind (over 15 mph), water all active construction areas as needed based on the activity, soil and wind exposure, apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydro seed area, cover all trucks hauling dirt, sand, or loose materials, cover inactive storage piles, sweep streets if visible soil material is carried out from the construction site, plant vegetative ground cover in disturbed areas as soon as possible, and post a publicly visible sign with the telephone number and person to contact regarding dust complaints.

Implementation of the project would reduce use of fossil fuels and natural gas through providing an alternative mode of transportation within the City and the County, resulting in a net benefit to regional criteria pollutant emissions. Therefore, construction and operational impacts would be **less than significant with mitigation**.

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

Project construction would result in temporary increases in air pollutants (e.g., fugitive dust and exhaust from equipment). Portions of the proposed trail are located adjacent to the Santa Cruz Beach Boardwalk, businesses, and residential properties. Implementation of the project has the potential to expose airborne particles and a small quantity of emissions to the surrounding land use areas. However, implementing MBARD's recommended BMPs and compliance with the City and County construction standards, would reduce potential impacts to a less than-significant level. Therefore, temporary increases in air pollutants would be **less than significant with mitigation** and would not be cumulatively considerable.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The emissions from the operation of diesel-powered construction equipment and asphalt paving would create odors during the trail construction period. However, these odors would be limited to the specific area under construction and would be short term. Therefore, these odors would not adversely affect a substantial number of people, and the impact is considered **less than significant**.

2.4.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game 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 Game or US 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?	☐	☒	☐	☐
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 applicable policies protecting biological resources?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?	☐	☐	☐	☒

Environmental Setting

The project area is located within the San Lorenzo River and Arana Gulch watersheds, as well as the coastal zone of Santa Cruz. EcoSystems West Consulting Group prepared a list of Sensitive Species that could occur in the project area, based on the biological resources identified from the following databases:

- California Department of Fish and Wildlife's California Natural Diversity Database (CNDDB 2021)
- U.S. Fish and Wildlife Service Listed Species Quad Search (2021)
- California Native Plant Society Inventory of Rare and Endangered Plants (2021)
- Information for Planning and Consultation (IPaC)

A field survey of the proposed project was conducted on July 20 and 21, 2021, by EcoSystems West biologist Erin McGinty. The biological survey included a search of special-status species, vegetation communities, sensitive habitats, and any potential jurisdictional waters of the U.S. along the proposed project alignment of Segment 8 and 9.

There are no critical habitats within the project area. However, there are sensitive habitats that exist within the project area that have the potential to support sensitive species, including:

- Aquatic habitat of San Lorenzo River and the Santa Cruz Harbor (supporting marine mammals and the federally listed southern sea otter);
- Aquatic and riparian habitat along Pilkington Creek, Woods Creek, and Twin Lakes State Beach;
- Eucalyptus grove along the east side of the Harbor (supporting bird rookeries) and Eucalyptus and cypress grove along Woods Creek (supporting monarch butterflies);
- Seep wetland along the tracks between the Harbor and Pilkington Creek;
- Oak woodland along Twin Lakes State Park; and
- Native grassland within Twin Lakes State Park (near but outside of the project area).

Wildlife Species. Common wildlife species that could be found within the project area include: the following: monarch butterfly (*Danaus plexippus*), tidewater goby (*Eucyclogobius newberryi*), Central California Coast coho salmon (*Oncorhynchus kisutch*), Central California Coast steelhead (*Oncorhynchus mykiss irideus*), American peregrine falcon (*Falco peregrinus anatum*), western snowy plover (*Charadrius nivosus nivosus*), olive-sided flycatcher (Contopus cooperi), oak titmouse (Baeolophus inornatus), western red bat (Lasiurus blossevillii), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) and southern sea otter (*Enhydra lutris nereis*).

Vegetation Species. There is one occurrence of the endangered Santa Cruz Tarplant (*Holocarpha macradenia*) that is within the general vicinity of the proposed project, at Twin Lakes State Beach, and would not be impacted by project activities.

Impact Analysis

a. Would the project 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 Game or U.S. Fish and Wildlife Service?

There were no special status species documented along the project alignments. However, there is habitat that could support special status species. Proposed project activities along the Segment 8 trail alignment would occur in areas that are already highly disturbed and located within the built urban environment. The Segment 9 trail alignment extends through a Eucalyptus and Cypress grove, which could support monarch butterflies and bird rookeries, as well as through aquatic and riparian habitat

along the Pilkington Creek, Woods Creek, and in the vicinity of the Santa Cruz Yacht Harbor and Twin Lakes State Beach. Any potential direct or indirect impacts to special status species would be minimized by requiring pre-construction wildlife and bird surveys throughout the project site before the start of construction, environmental awareness training for construction workers, and implement best Management Practices (BMPs). Therefore, impacts to any sensitive wildlife species that would potentially occur within the project area would be **less than significant with mitigation**.

b. Would the project 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 Game or US Fish and Wildlife Service?

The trail alignments along Segment 8 and Segment 9 would not have a significant adverse effect on any riparian habitat or sensitive natural community identified by the California Department of Fish and Wildlife (CDFW 2021). Construction activities along Segment 8 would occur on a Class IV paved bike lane, so impacts would be minimal in nature. Construction activities would include slope stabilization at the start of Segment 9, adjacent to the SLR Trestle Bridge and Murray Avenue. This could result in potential impacts to low-lying depression areas and vegetation under the roadway and along the Eucalyptus Grove adjacent to Murray Ave at Mott Street. Potential effects caused by construction activities could occur from the grading required to install the paved trail, which would remove vegetation. Implementation of mitigation or BMP's to protect sensitive wildlife and habitat include: an environmental awareness program given to construction workers, preparation of an erosion and sediment control plan and implementation of a Storm Water Pollution Prevention Plan (SWPPP) as part of the NPDES Permit and a General Construction Activity Storm Water Permit to minimize the potential for sediments or contaminants to be discharged into Monterey Bay, the San Lorenzo River or potential jurisdictional wetlands within vicinity. Therefore, potential impacts to riparian habitat or sensitive natural communities within the project area would be **less than significant with mitigation**.

c. Would the project 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?

The trail alignments along Segment 8 and Segment 9 would not have a significant adverse effect on protected wetlands within the project area. However, there are sensitive habitats that are within the vicinity of the project area that include aquatic, riparian and a potential seep wetland. The sensitive wildlife species and habitats would be subject to the mitigation or BMPs discussed above, and would not include any direct removal filling or hydrological interruption. Therefore, impacts resulting from the proposed project activities would be **less than significant with mitigation**.

d. Would the project 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?

The trail alignments along Segment 8 and Segment 9 would not substantially interfere with the movement of any native wildlife species. Segment 8 is located within an urban area, and there are no wildlife corridors within the project area. The western portion of Segment 9 is located alongside a Eucalyptus grove, which has the potential to host raptor species and monarch butterflies. Project activities could require the removal of these trees, in which case the potential impacts would likely be **less than significant with mitigation**.

e. Would the project conflict with any applicable policies protecting biological resources?

The project would be subject to applicable policies protecting biological resources in the project area. These include, but are not limited to, City's tree ordinance and the County's riparian and tree ordinances. For example, the Santa Cruz City Code Chapter 9.56 (City of Santa Cruz 2016a), that regulates heritage trees, shrubs, and all street trees of any size. A heritage tree is defined as "Any tree, grove of trees, shrub or group of shrubs, growing on public or private property within the City, which has a trunk with a circumference of 44 inches, has historical significance, or has horticulture significance" (City of Santa Cruz). If a tree within the proposed project area would need to be removed, a heritage tree permit or street tree permit would be required before tree removal. Compliance with the policies protecting biological resources may require implementation of mitigation measures or BMPs to ensure the project would not conflict with local policies protecting biological resources. This will be further evaluated in the EIR analysis. Therefore, the impact would be **less than significant with mitigation**.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan?

The trail alignment is not located in an area that is managed by a Habitat Conservation Plan, Natural Community Conservation Plan, or other applicable habitat conservation plan. Therefore, the proposed project activities would not conflict with any of these plans and there would be **no impacts**.

2.4.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to 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 dedicated cemeteries?	☐	☒	☐	☐

Historical resources are features that are associated with the lives of historically important persons and/or historically significant events, that embody the distinctive characteristics of a type, period, region or method of construction, or that have yielded, or may be likely to yield, information important to the pre-history or history of the local area, California, or the nation. Examples of typical historical resources include, but are not limited to, buildings, farmsteads, rail lines, bridges, and trash scatters containing objects such as colored glass and ceramics.

The 2.2-mile linear project area is along the Santa Cruz Branch Rail Line (SCBRL), a 32-mile, continuous travel corridor, the tracks for which may be considered a historic resource. According to the City of Santa Cruz Historic Building survey, there are eleven listed historical buildings near the trail alignments (City of Santa Cruz 2008). Further, Santa Cruz County is in the Monterey Bay Area, which is considered a cultural-historical geographic region spanning the central California coastline, from Big Sur northward to south of the San Francisco Bay. Archaeological sites dating to the Paleoindian and Millingstone periods (3500 B.C. or earlier) in the Monterey Bay Area are rare, and archaeological evidence from the Late and Protohistoric periods (A.D. 1200-1769) are poorly represented, although sites dating to these periods have been identified. Much of Santa Cruz County is located in potentially archaeological sensitive areas, especially undeveloped coastal areas, slopes, and drainages that may occur on the trail alignments (RTC 2013).

Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Project construction could potentially damage unidentified existing archaeological resources along the trail alignment, specifically near Pilkington Creek, Leona Creek, and Stream 1545. The project could

also potential impact historic resources in the project vicinity. The trail would occur within the SCBRL right-of-way, a long-standing local transportation corridor, and would have to potential to impact historic structures within the transportation corridor, including any of the eleven listed historic buildings near the trail alignments. Potential impacts to these historic structures will be evaluated in the EIR analysis.

The optional *Trail on the Rail Line (Interim Trail)* alignment would also impact the SCBRL rail line, which is over 50 years of age and may be considered a historic resource eligible for listing in the state or federal historic register.

Overall, the project would have a **potentially significant impact** on historic and archaeological resources, and this issue will be analyzed further in the EIR to determine if the potential impacts would be less than significant with mitigation.

c. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Cultural resources, and related human remains, are likely to occur along water courses, near rock outcroppings, oak strands, and along historic slough margins. Construction of the project would involve ground disturbance and would thus have the potential to disturb human remains. If human remains are found, the State of California Health and Safety Code Section 7050.5 states no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the Santa Cruz County Coroner must be notified immediately. If the human remains are determined to be prehistoric, the Coroner would notify the Native American Heritage Commission, which would determine and notify a most likely descendant (MLD). The MLD has 48 hours from being granted site access to make recommendations for the disposition of the remains. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from subsequent disturbance. Because there are specific procedures and requirements to follow in the event human remains are discovered, impacts to human remains would be **less than significant with mitigation**.

2.4.6 Energy

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental Setting

The Environmental Setting information will be included in the EIR.

Impact Analysis

a. Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Project construction would utilize fossil fuels. However, once constructed, using or operating the trail would not result in wasteful, inefficient or unnecessary consumption of energy resources. The California airborne toxics control measure (Title 13, Section 2485 of the California Code of Regulations) limits construction equipment operators idle time to five (5) minutes (BAAQMD 2017), which would minimize inefficient fossil fuel use. Therefore, neither construction nor operation of the trail would result in wasteful or inefficient use of energy, and the impact would be **less than significant**.

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The City of Santa Cruz General Plan (2012a) includes a goal (Chapter 10, NRC 4.1.9), that states the City's goal to promote energy efficiency and renewable energy projects. The City has also established a Green Building Program (2013) that includes building ordinances, standards, and construction requirements. Implementation of the project would have **no impact** to either of the goals set forth by the General Plan, Green Building Plan, or any local renewable energy plan.

2.4.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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.	☐	☐	☒	☐
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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Environmental Setting

The project area is located southwest of the Santa Cruz Mountains, a tectonically active region that was formed through thrust-faulting of the San Andreas Fault. The project region is dominated by marine terraces, which incrementally increase in elevation from sea level at the Pacific Ocean up towards the Santa Cruz mountains (approximately 2,000 feet in elevation). Segment 8 of the trail alignment is located adjacent to the Pacific Ocean, and Segment 9 is generally located atop the first marine terrace (approximately 30 feet above sea level).

The project area is made up primarily of three distinct geologic units; Fluvial Basin Deposits, marine terrace deposits, and Purisima Formation bedrock, as mapped on the U.S. Geological Survey Geologic Map of Santa Cruz County (Brabb et al. 1997).

The basin deposits consist of unconsolidated, organic-rich silty clay, and occur below portions of the trail along the Santa Cruz Beach Boardwalk, the Santa Cruz Harbor, and Twin Lakes State Beach respectively (Pacific Crest Geotechnical Report 2021). The marine terrace deposits consist of fluvial silt, sand and gravel. Purisima Formation is thickly bedded yellow-grey siltstone interbedded with blue-grey sandstone (Brabb et al. 1997). The marine terrace deposits and Purisima Formation occur in alternating sections at Segment 9 of the trail from East Cliff Drive at the San Lorenzo River and areas before and after the Santa Cruz Harbor respectively (Pacific Crest Geotechnical Report 2021).

Impact Analysis

a. Would the project 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.

ii. Strong seismic ground shaking?

The project area is located outside of the limits of the State Alquist-Priolo Special Studies Zone (County of Santa Cruz GIS webmap, 2020; California Division of Mines and Geology 2001). However, the project area is located approximately 1 mile east of the Ben Lomond Fault, 6.5 miles west of the Zayante Fault zone, and 10 miles west of the San Andreas Fault Zone. In addition to these major fault zones, the Monterey Bay-Tularcitos and Sargent faults are located approximately 4 miles and 11.5 miles from the project area, respectively (Pacific Crest Geotechnical Report 2021). Although the Ben Lomond Fault is proximal to the project area, there is little evidence of earthquakes, and no evidence of geologically recent (within the past 100,000 years) offset along this fault (Stanley and McCaffrey 1983). Due to the proximity of the trail alignment to active and potentially active faults, the trail would be subject to high intensity ground shaking during the lifetime of the project.

The trail and other project features, such as retaining walls and viaducts, would be subject to the California Building Code seismic design force standards, as well as applicable City and County building codes, which would reduce potential damage from seismic groundshaking to the extent practicable and feasible. Therefore, the impact would be **less than significant**.

iii. Seismic-related ground failure, including liquefaction?

Portions of the trail alignment are mapped as an area with very high susceptibility for liquefaction, as shown on the Santa Cruz County GIS Hazard Map (County of Santa Cruz 2020). The basin deposits

located throughout the project area are semi-consolidated; this means that when the silty clay soils become inundated with surface water, they will behave as a liquid, instead of draining into the ground. Liquefaction can induce lateral spreading when a liquefied soil mass fails on an inclined slope, making the project area highly susceptible to lateral spreading. Because the project area is located on a topographically low area with a slope grade of 15 percent, the project area is susceptible to moderate lateral spreading.

The basin deposits that underlay the trail alignment near the Santa Cruz Beach Boardwalk, Santa Cruz Harbor, and Twin Lakes State Beach are potentially liquefiable, and result in a Site Class F designation. This designation may require a site-specific ground motion response analysis to determine acceleration values for projects structures (Pacific Crest Geotechnical Report 2021).

In order to offset potential impacts to project structures through the presence of geologic features that are susceptible to liquefaction, the project would be subject to Chapter 18.04, Section 14.1, Building Code within the City of Santa Cruz Municipal Code, and Chapter 12.10.215, Section 14.1.4, Building Code of the County of Santa Cruz. All bridges, retaining walls and any structures supported by pile foundations would be designed in accordance with the following recommendations from the Draft Geotechnical report (Pacific Crest Geotechnical Report 2021).

- If wet or soft soils are encountered at the bottom of excavation within varying segments of the trail (especially along Segment 8) the soils must be replaced with stabilized fabric or crushed rock to create a stable working surface.

- Native soils to be used as engineered fill should be limited to the predominantly granular materials (ie. Silty to clayey sand and sandy silt), that is encountered along the majority of the alignment. If expansive clay soils are encountered, they should not be used as engineered fill without additional processing (lime treatment, blending, etc).

- Non-expansive native or imported soils should have a Plasticity index between 4 and 12, a minimum Resistance "R" Value of 30, and be non-expansive

These requirements would ensure the stability of all proposed project structures based on the geologic features present within the project area. Therefore, the impact would be **less than significant with mitigation**.

iv. Landslides?

The majority of the trail alignment is located within topographically low and flat to gently sloping areas. There are no mapped landslides within the proposed trail alignment (Santa Cruz County GIS webmap, 2020). Therefore, the majority of the project area and trail do not have the potential to be subject to damage from a landslide. However, there are in-filled drainages located along portions of the trail near Twin Lakes State beach, which could potentially be subject to a landslide hazard that

could undermine the trail. In-filled drainages are areas which previously held and/or transferred water, and have been filled with engineered-fill material. The Draft Geotechnical Report recommends that surface water runoff along in-filled drainage areas must be properly controlled by drainage facilities to mitigate potential landslide activity that could undermine the trail (Pacific Crest Geotechnical Report 2021). Drainage facilities include subdrains, gravel blankets, rock-fill surface trenches or horizontally drilled drains and will be determined by a representative of Pacific Crest Engineering during construction grading operations (Pacific Crest Geotechnical Report 2021). Therefore, the impact would be **less than significant with mitigation**.

b. Would the project result in substantial soil erosion or the loss of topsoil?

The majority of the trail alignment is located within topographically low and flat to gently sloping areas. There is some potential for surface soil erosion to occur during project construction activities due to the presence of terrace deposits that have a moderate potential for erosion (Brabb et al. 1997). However, the flat nature of the project area would minimize the potential for erosion related impacts.

The Segment 8 trail alignment would have minimal ground disturbance from construction activities, because this portion of the trail includes improvements to the existing sidewalk and bike facilities. There are portions of the Segment 8 trail alignment that include sidewalk widening, which would require shallow scraping of the existing sidewalk and the potential loss of topsoil.

The Segment 9 trail alignment would involve more ground disturbance. The proposed project, Trail Next to Rail Line (Ultimate Trail Configuration) would require more retaining walls then the optional interim phase. The alternative project evaluated in the Initial study, the optional Trail on the Rail Line (Interim Trail) alignment, could contribute additional impacts to the loss of topsoil. The Interim Trail option involves the removal of existing rail ties along Segment 9, from East Cliff Avenue to 17th Avenue, and then later requires reinstallation of the tracks/ties and construction of the trail (and retaining walls) alongside the tracks.

Potential impacts associated with soil erosion and loss of topsoil could be reduced by implementing mitigation measures or BMPs during construction. These could include, but would not be limited to:

- Surplus asphalt and rubble would be removed from the project area and transported to the local landfill;
- All disturbed areas within the area would be stabilized; and,
- Erosion control measures would be implemented, modified and replaced.

The EIR analysis will include quantification for a more detailed comparison. In summary, both the proposed trail alignment and the optional interim phase trail alignment could result in substantial erosion or loss of topsoil, but mitigation measures or BMPs would reduce this impact. Therefore, the impact would be **less than significant with mitigation**.

c. Would the project 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?

The project area is located on sand and clay-rich terrace deposits (Pacific Crest Geotechnical Report 2021), resulting in the area being sensitive to potential collapse, lateral spreading, subsidence, liquefaction and landslides.

In order to offset the potential impacts that may occur to the trail facilities through the presence of geologic features that are susceptible to expansive soils, the project would be subject to Chapter 18.04, Section 14.1, Building Code within the City of Santa Cruz Municipal Code and Chapter 12.10.215, Section 14.1.4, Building Code of the County of Santa Cruz. These requirements would ensure the stability of all proposed project structures based on the geologic features present within the project area. Therefore, this impact would be **less than significant**.

d. Would the project 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?

The project area is shown to be underlain with expansive soils on the Santa Cruz County GIS Hazard map (County of Santa Cruz 2020). Expansive soils are composed of expanding clays, which are consistent with the marine terrace deposits found in the project area. When expansive clay soils become saturated with water, they expand and then contract when conditions are dry. Thus, the project area is susceptible to shrink/swell potential throughout the year, particularly during the rainy season from October through May. The Draft Geotechnical Report recommends that pavements and structural foundations are to bear upon non-expansive engineered fill deposits (Pacific Crest Geotechnical Report 2021 – Subgrade Preparation Requirements pg 19 - 20), to reduce the shrinking and swelling potential of the soil underlaying the trail.

Therefore, this impact would be **less than significant with mitigation.**

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

The proposed project does not include the use of septic tanks or alternative wastewater disposal systems. Therefore, there would be **no impact**.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The project would not impact any mapped paleontological resources. Areas that are considered sensitive for paleontological resources have been mapped through the Santa Cruz County GIS

Database (County of Santa Cruz 2020). Implementation of the project would involve ground disturbing construction-related activities. Although paleontological resources are contained within underlying soil layers and geologic deposits, the project area is located in a highly developed area, and the ground disturbing activities would be limited primarily to the upper soil layers. Thus, potential impacts that may occur to paleontological or geologic features as a result of ground disturbance from construction activities would be minimal and considered **less than significant**.

2.4.8 Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental Setting

Greenhouse Gas (GHG) emissions are primarily caused by carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) emitted from both natural and anthropogenic activities. The increase in GHG emissions are correlated with causing the observed increase in the average temperature of the Earth's surface and atmosphere caused by which can contribute to changes in global climate patterns resulting in global climate change.

The State of California passed the Global Warming Solutions Act of 2006 (AB 32), which requires reductions of GHG emissions generated within California. The Governor's Executive Order (EO S-3-05) and AB 32 (Health & Safety Code, § 38501 et seq.) both seek to achieve 1990 emissions levels by the year 2020. The California Air Resources Board (CARB) is the lead agency for implementing AB 32. In accordance with requirements of AB 32, a scoping plan was adopted by CARB in December 2008 and updated in 2017. This most recent scoping plan lays out the framework for achieving the 2030 reductions as established in SB 32, described below.

In October 2012, the City of Santa Cruz adopted a Climate Action Plan (CAP) that outlines the actions the City will take over the next ten years to reduce GHG emissions by 30 percent (City of Santa Cruz 2012b). The CAP identifies five categories for CAP actions and identifies reduction strategies to achieve municipal and community goals. Each category chapter briefly outlines the issues and current programs, and then outlines programs and actions necessary to fully achieve the reductions for that sector. The categories are: energy efficiency, transportation and land use planning, water use and waste reduction, locally generated renewable energy, and public partnerships, education and outreach.

Impact Analysis

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Project construction activities would generate GHG emissions caused by emissions from construction equipment. The construction-related emissions would be short term, and there would not be long term GHG emissions generated, due to the nature of the trail alignment being for the explicit purpose of pedestrian and bicycle use. Long term effects of the proposed project would result in a net benefit regarding GHG emissions in the City and County, because providing a non-vehicular option for travel would reduce vehicle miles traveled throughout the City and County of Santa Cruz. Therefore, there would be no long-term adverse impact on the environment.

The short-term GHG emissions generated from the project would be produced in the form of emissions from the operation of various construction equipment and worker supply vehicles, both of which use fossil fuels to operate. However, the emissions that result from construction equipment, activities, and vehicles are not likely to exceed established thresholds for GHG emissions, according to the Monterey Bay Sanctuary Scenic Trail Network Final EIR (Section 4.7, page 19). Therefore, the contribution of GHG emissions resulting from the project would be **less than significant**.

b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

As described under (a) above, the project would not result in any ongoing annual GHG emissions that would impact the state, City or County's ability to meet emissions reduction targets. The City of Santa Cruz CAP does not include any GHG reduction strategies related to construction (City of Santa Cruz Climate Action Plan 2030 and the County of Santa Cruz Climate Action Strategy 2013). Therefore, the project would support the goals and strategies of the applicable plans, and there would be no conflict with the applicable plans and thus **no impact**.

2.4.9 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☒	☐	☐	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐
e. For a project located within an airport land-use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise 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, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☒	☐	☐	☐

Environmental Setting

The trail alignment would be located along the existing Santa Cruz Branch Rail Line. Historically, herbicides were commonly used to control weeds along railroad corridors; and creosote, a substance known to contain carcinogenic poly-nuclear aromatic hydrocarbons, was used to protect wooden railroad ties from decay. The use of these substances on and adjacent to the railroad increases the possibility of soil contamination along the trail alignments. The rail line historically transported lumber, quarried material, agricultural products, coal, and gypsum. There is the possibility that an accidental spill of hazardous materials occurred in the past when the rail line was more active (RTC 2013). In addition, the current industrial, commercial, and residential uses that are adjacent to the trail alignment could use hazardous materials.

A Phase I Environmental Site Assessment (ESA) conducted in March 1997 by Geomatrix Consultants for the Davenport and Santa Cruz Branch Rail Lines identified several features of potential environmental concern along the railroad corridor within the City of Santa Cruz, including a tool house, roadmasters' car house, scrap bin, and freight house at the Santa Cruz Station and an in-ground oil reservoir near the Casino Station near the beginning of Segment 8 at the intersection of Beach and Cliff Streets.

Areas of concern that could potentially affect groundwater conditions beneath the rail corridor include a freight house at the Seabright Station, the maintenance facilities at the Santa Cruz Station, and gas and oil facilities in the Santa Cruz Beach Boardwalk. Atypical soil staining between the railroad tracks near the start of Segment 8 suggests a petroleum-based spill occurred in the area (RTC 1997). A Phase II soil sampling investigation was conducted by AMEC Geomatrix, Inc. in December 2009. The Phase II investigation found arsenic generally distributed in shallow soil along the Santa Cruz Branch Rail Line, likely as a result of railroad operations. Some of the soil samples found that lead, chromium, and pesticides were detected at concentrations that exceeded hazardous waste screening criteria (RTC 2013). An Initial Site Assessment is being prepared by Weber, Hayes & Associates that will further inform the EIR analysis for Coastal Rail Trail Segments 8 and 9.

In addition to the hazardous substances associated with the rail line's operation, hazardous substances could also exist at the SLR Trestle Bridge, because all of the existing railroad bridges and trestles along the Santa Cruz Branch Rail Line were constructed at a time when asbestos and lead-based paint were commonly used (RTC 2013). Considering the age of the SLR Trestle Bridge, there is potential for asbestos and lead to exist along the part of the trail alignment connected to the SLR Trestle Bridge.

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Once constructed, the trail would be utilized by pedestrians and bicyclists for active recreation and transportation. Standard recreational and transportation uses that would take place along the trail would not involve the routine transport, use, or disposal of hazardous materials. Therefore, the project would not cause a significant hazard to the public. This impact would be **less than significant**.

b. Would the project 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?

Construction Impacts

During ground-disturbing activities associated with construction, existing soil contaminants may be released. This could expose construction workers to soil contaminants due to former railroad operation along the alignment. In addition, construction equipment may include hazardous materials such as lubricants and fuels. Therefore, both construction activity and construction equipment could involve the release of hazardous materials which would create a possible hazard to the public or environment.

As such, construction of the trail could create a significant hazard through releasing hazardous materials during construction. Further site-specific assessment would be necessary to determine whether hazardous materials exist along the trail alignments, and subsequent analysis would need to be conducted to address the issue. This impact would be potentially significant and will be discussed further in the EIR.

Operation Impacts

Once constructed, the trail would be used for active recreation and alternative (pedestrian/bicycle) transportation, and there would be no storing, transporting, or otherwise interacting with hazardous materials. Therefore, the risk of accidental release of hazardous materials during operation would be minimal, and the impact would be less than significant.

Due to the potential for significant construction-related impacts, the overall impact would be **potentially significant**.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

In Segment 8, no portion of the trail alignment would be located within 0.25 mile of a school. The eastern portion of Segment 9 would be located approximately 600 feet northeast of Shoreline Middle School. As discussed under criterion b above, there is potential for hazardous materials to exist along the rail line corridor that could be exposed during construction, which could require disturbance and movement of contaminated soil or other site remediation techniques within 0.25 mile of a school during trail construction. This impact would be **potentially significant**.

d. Would the project 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?

According to the Cortese list pursuant to Government Code Section 65962.5, the trail alignments are not listed hazardous materials sites (EnviroStor 2021; GeoTracker 2021). As such, neither trail alignment would create a significant hazard to the public or the environment beyond the impacts discussed under other criterion within this section. Therefore, this impact would be **less than significant**.

e. Would the project 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, result in a safety hazard or excessive noise for people residing or working in the project area?

The closest airport to the trail alignment would be the Monterey Bay Academy Airport, a private airport, approximately nine miles southeast of the eastern portion of Segment 9, in southern Santa Cruz County near the City of Watsonville. The Monterey Bay Academy Airport does not have an adopted airport land-use plan. The closest public airport to the trail alignment is the Watsonville Municipal

Airport, located approximately 11 miles southeast of the eastern portion of Segment 9, in southern Santa Cruz County in the City of Watsonville. The trail alignment would not be located within the Watsonville Municipal Airport Master Plan area (Watsonville Municipal Airport 2003), nor within two miles of a public airport or public use airport. Therefore the project (trail users) would not experience safety hazards or excessive noise related to proximity to an airport, and there would be **no impact**.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The County of Santa Cruz's Operational Area Emergency Management Plan addresses the planned response to large-scale emergencies affecting the unincorporated area of Santa Cruz County (County of Santa Cruz 2015). The City of Santa Cruz's Emergency Operations Plan identifies the city's strategy for responding to emergency events in accordance with the Santa Cruz County Operational Area Memorandum of Understanding (City of Santa Cruz 2018).

The trail alignment would not impair implementation of or physically interfere with either of these existing emergency plans, as the trail alignments would not alter existing transportation facilities which have been identified as emergency routes, have been otherwise identified for use during an emergency, or existing emergency plan routes. The trail alignments would intersect existing roadways (e.g., Mott Avenue, Seabright Avenue, 7th Avenue, Live Oak Avenue, El Dorado Avenue, and 17th Avenue); however, neither trail alignment proposes adding any physical elements which would block any existing emergency plan routes. Therefore, the impact would be **less than significant**.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

The trail would be located within the Incorporated and Unincorporated Local Responsibility Areas (LRA) of Santa Cruz County (CAL FIRE 2007a). Within the LRA, Segment 8 would be located in the LRA 'Un-zoned' zone. Part of Segment 9 would be located in the LRA High Fire Hazard Severity zone (CAL FIRE 2007b).

Because the trail alignment, specifically part of Segment 9, would be located in a High Fire Hazard Severity zone, project implementation could expose trail users to impacts from wildland fire. This impact would be **potentially significant**. For further discussion of wildfire impacts related to the project, refer to Section 2.4.20, *Wildfire.*

2.4.10 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 offsite?	☐	☒	☐	☐
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
iv. Impede or redirect flood flows?	☐	☒	☐	☐
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?	☐	☐	☒	☐

Environmental Setting

The project area is located within the San Lorenzo River watershed (Segment 8) and the Arana Gulch-Rodeo Watershed (Segment 9). The San Lorenzo River watershed covers 138 square miles of northern Santa Cruz County and drains into the Pacific Ocean through the San Lorenzo River, at the end of Segment 8 and the beginning of Segment 9. The San Lorenzo River originates in the Santa Cruz Mountains and extends 29 miles to the Pacific Ocean, and includes the following primary tributaries: Boulder, Bear, Branciforte, Carbonara, Fall, Newell, Zayante and Kings Creek. The San Lorenzo River is included in the List of Water Quality Limited Segments (Clean Water Act Section 303 (d), 2010) for the following contaminants: chlorpyrifos, chlordane, pathogens, polychlorinated biphenyls (PCBs), nutrients and sedimentation (Central Coast Regional Water Quality Control Board 2018).

The Arana Gulch-Rodeo watershed covers a 3.5 square-mile area at the eastern edge of the City. The Arana Gulch-Rodeo watershed originates in the Santa Cruz Mountains, which drains into Woods Lagoon before connecting to the Santa Cruz Harbor and empties into the Pacific Ocean. In general, the Project area drains towards the Pacific Ocean, the San Lorenzo River, or the City storm drain system. The SLR Trestle Bridge that crosses over the San Lorenzo River is not included in the scope of this project.

Additionally, the project area is located adjacent to the Pacific Ocean and is within the Mid-County Groundwater Basin. The geotechnical investigation showed that groundwater was encountered at depths of 4 feet below surface, with the potential for groundwater to be present at other depths, which could be encountered through construction activities (Pacific Crest Geotechnical Report 2021).

Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Construction

Project construction activities would involve construction equipment that uses fuels and activities that would disturb the soil and create dust, both of which could result in contaminants entering the storm drainage system, which could have an adverse effect on surface or groundwater quality and potential violate water quality standards.

In Segment 8, the trail would be incorporated into the existing bicycle and pedestrian facilities. Construction activities associated with the planned improvements would include painting to increase visibility within the existing paved bike lane, a paved sidewalk along the rail line, and the installation of a 6-inch curb and gutter. In Segment 9, trail construction would require excavation that could result in erosion of topsoil and thus impact surface water quality. Proposed construction activities would also require the use of petroleum products and other chemicals that could introduce impacts to water quality. Although construction activities are relatively minor, they could still result in contaminants entering the stormwater drainage system, which could have an adverse effect on water quality. Potential water quality impacts along the proposed trail alignment could be reduced through the implementation of construction BMPs and therefore would be **less than significant with mitigation**.

In Segment 9, the trail would be new and would require more substantial earth movement and associated construction equipment and activities that could result in contaminants entering the storm drainage system and degrading water quality. For the proposed *Trail next to the Rail line (Ultimate Trail Configuration)*, construction activities include the installation of several retaining walls along the trail alignment. For the optional interim phase *Trail on the Rail line (Interim Trail)*, construction activities would include the removal of the existing ties and tracks, which could also require more extensive excavation if remediation actions are required. Additionally, the Interim Trail would include

construction of the Ultimate Trail, requiring substantial additional construction activities to re-install the tracks/ties and construct the trail and associated retaining walls alongside the tracks.

Construction activities for the proposed project could expose the surrounding soil to pollutants associated with construction equipment, such as fuels, oils or solvents. However, project activities would be limited to dry summer months to reduce the potential for stormwater runoff and soil contamination. Implementation of the project would result in a small increase in impermeable surfaces along Segment 9, which would result in a small increase in the volume of stormwater runoff from the project site.

Implementation of Best Management Practices (BMPs) would be identified to address hazardous waste by requiring emergency procedures before the start of construction, in the event of a hazardous materials spill. Throughout construction and project implementation, BMPs would be implemented to control on-site erosion and sedimentation and surface water runoff, in compliance with the Caltrans Storm Water Management Plan and in compliance with the Caltrans NPDES Statewide Stormwater Permit, and Construction General Permit.

As described above, in order to protect water quality against construction related impacts, BMPs described in the City of Santa Cruz Storm Water Management Plan would be implemented throughout the duration of project construction to protect water quality. Therefore, the impact would be **less than significant with mitigation**.

Operation

Once constructed, the project would not likely have adverse effects on water quality. The project would result in new impervious surface that could result in a minor increase in stormwater runoff into adjacent drainages. Because the trail would be used by pedestrians and bicyclists (and not used by motor vehicles), the potential there to be an increase in contaminants from stormwater runoff would be low and less than significant. Refer to the discussions below for potential effects of increased impervious surface on drainage and groundwater.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Trail operation would not require or generate demand for water use that could decrease groundwater supplies or interfere substantially with groundwater recharge. Trail construction could require a small amount of water for dust control, and some construction activities (e.g., installing viaduct piers) could encounter groundwater, but no adverse effects on groundwater are anticipated.

As stated above, groundwater was encountered at depths of 4 feet below surface along the trail alignment, with the potential for groundwater to be present at other depths (Pacific Crest Geotechnical

Report 2021). Groundwater recharge occurs primarily from stormwater runoff that percolates into the ground.

Project construction generally requires excavation up to 3 feet deep for the trail, but trail facilities such as the retaining walls and viaducts would require greater excavation depth which could reach groundwater.

Additionally, construction of Segment 9 would result in 1.6 miles of new paved trail and thus approximately 1.9 acres[2] of new impervious surfaces compared to existing conditions. The surface flow of rainwater across the trail would drain alongside the trail and permeate into the ground, and in some cases would be directed to existing or new drainage facilities included as part of the project. The increased amount of surface flow would result in minor drainage patterns and would not be significant enough to inhibit groundwater recharge. Further, although the project would slightly increase impermeable surfaces, the trail alignment is not located in an area that has any significant impact on the local groundwater basin (Mid-County Santa Cruz Groundwater Basin).

The Draft Geotechnical Investigation performed by Pacific Crest Engineering (September 2021) recommends drainage facilities to be utilized during grading operations in order to protect groundwater resources as a result of construction activities. Additionally, a hydrology/water quality study will be prepared by Balance Hydrologics based on the 30% project designs. Recommendations from these reports will be included in the project's drainage design features and construction specifications to minimize impacts to drainage patterns, water quality, and surface and groundwater resources.

The project would also be required to comply with any additional permit requirements from the Regional Water Quality Control Board (Water Board). For example, if groundwater is encountered during construction a dewatering plan would be required. Any potential groundwater discharge would be consistent with Water Board requirements and as such would not result in a violation of water quality standards or waste discharge requirements.

Therefore, the project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge, such that the project may impede sustainable groundwater management of the basin; and this impact would be **less than significant**.

c. Would the project 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 offsite?

[2] 1.6 miles (8,448 feet long) x 12 feet wide = 84,480 square feet or 1.9 acres

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

iv. Impede or redirect flood flows?

The project would not substantially alter the existing drainage pattern of the project area by altering a stream or river or by the adding impervious surfaces. However, the project could result in minor changes to localized drainage patterns from the new impervious paved trail surface.

As described under 'b' above, construction of Segment 9 would result in 1.6 miles of new impervious surfaces compared to existing conditions, which would increase amount of surface flow and could result in minor alterations to localized drainage patterns.

Project design and construction would incorporate recommendations from the hydrology/water quality study and geotechnical investigation to minimize impacts to drainage patterns, water quality, and surface and groundwater resources. If such recommendations are not incorporated into project design and construction specifications, they would be identified as mitigation measures in the EIR and required as part of project approval. Therefore, the project is not anticipated to substantially alter the existing drainage pattern of the project area in a manner that could cause substantial erosion or flooding, exceed system storm drainage system capacity, or affect flood flows. The impact would be **less than significant with mitigation**.

d. Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

The trail alignment along Segment 8 is located within the floodplain of the San Lorenzo River, as well as within the tsunami flood hazard zone. According to the Federal Emergency Management Agency (FEMA) Flood Map, the project area is designated as Zone X. Based on the review of the California Geologic Survey Tsunami Inundation Map for Emergency Planning for the Santa Cruz Quadrangle (July 1, 2009), the project area is mapped within a Tsunami Inundation area and is susceptible to tsunami inundation. Due to its proximity to the Pacific Ocean, Segment 8 could also be affected by a seiche. A seiche affects bodies of water that are in close proximity to the ocean after a tsunami-ocean wave has been generated by an earthquake event.

However, pursuant to the Supreme Court case decision in the CBIA vs. BAAQMD case, CEQA does not require an analysis of how the existing environmental conditions would affect a Project's residents or users, unless the proposed project would exacerbate those conditions. Since the project would not exacerbate the existing conditions that could expose people or structures to a significant risk due to flooding, tsunami or seiche zones.

Further, should the trail be inundated by water from such an event, the risk of pollutants being released is minimal to none because the trail would be used by pedestrians and bicyclists (not motor vehicles)

and wouldn't require the use or storage of pollutants that could be released. Therefore, the impact would be **less than significant**.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The project would not conflict with the Water Quality Control Plan for the Central Coastal Basin (Regional Water Quality Control Board) or the Mid-County Groundwater Basin Management Plan (2019). The proposed project would not result in any significant and unavoidable impacts to water quality or groundwater due to the reasons described in the sections above. In the event groundwater is encountered during construction activities, the contractor would halt work and the appropriate methods and would be determined by a qualified engineer and implemented (Draft Pacific Crest Geotechnical Report 2021). Therefore, the impact would be **less than significant**.

2.4.11 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☐

Environmental Setting

The rail corridor extends through primarily urban/suburban portions of the City and County. Land uses along the project area (SCBRL rail corridor) include commercial, industrial, residential, natural areas, public facilities, and parks and recreation (County of Santa Cruz 1994; City of Santa Cruz 2012a). Zoning districts along the trail alignments include industrial, residential, commercial, and recreational designations (County of Santa Cruz 2021; City of Santa Cruz 2004).

Impact Analysis

a. Would the project physically divide an established community?

The trail alignments would not physically divide established communities, as neither the proposed *Trail Next to Rail (Ultimate Trail)* nor the optional *Trail on the Rail Line (Interim Trail)* alignment would be physically large enough to divide a community. Because both trail alignments would follow the existing rail line, the alignments would not act as a new dividing element that was not already introduced by the Santa Cruz Branch Rail Line. Furthermore, the project would create a multimodal bicycle/pedestrian trail, which would encourage connections along the trail itself rather than create physical divisions. Therefore, the impact would be **less than significant**.

b. Would the project 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?

The new trail would be located in a predominately urban/suburban area around industrial, commercial, residential, natural areas, public facilities, and parks and recreational uses, as described in the Setting section.

In general, the new trail would not conflict with the permitted uses detailed in the County or City's General Plan, Santa Cruz County Zoning Regulations, or Santa Cruz Municipal Code Zoning Ordinance. In addition, as mentioned in the Santa Cruz County Code Chapter 13.11 and Santa Cruz Municipal Code Chapter 24.12, the trail would be required to undergo design review which would ensure the trail complies with jurisdictional land use plans and policies.

However, the optional *Interim Trail* alignment could conflict with policies concerning rail facilities and supporting the preservation of the rails. For example, County of Santa Cruz General Plan Policy 3.7.3 supports development of the RTC-owned rail corridor for passenger transit, recreational, and goods movement, as well as the Monterey Bay Sanctuary Scenic Trail. Additionally, the Santa Cruz County Regional Transportation Commission's MBSST Network Master Plan (2014) and Transit Corridor Alternatives Analysis (2021) support retaining the rail. However, the optional Interim Trail includes future rebuilding of the rail line and constructing the Ultimate Trail Configuration alongside the rail. Potentially impacts will be discussed further in the EIR.

2.4.12 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Environmental Setting

The project area is located within developed urban/suburban areas of the city and county. The State Board of Mining and Geology prepared a map (1982) and report (1986/87) titled Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area, which did not indicate any designated resources or resources of statewide/regional significance within the City of Santa Cruz. In addition, the City of Santa Cruz General Plan (2030) does not identify mineral resources or mineral resource recovery sites within the City.

Impact Analysis

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

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?

As described above, there are no mapped or designated mineral resources within the project area; therefore, there would be no loss of availability to any mineral resources and thus **no impact**.

2.4.13 Noise

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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. Generation of excessive groundborne vibration or groundborne 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, expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting

The existing conditions within the project area include the urban/suburban environment developed with commercial, industrial, recreational and residential land uses, as well as high traffic volume roadways including Beach Street (along the Santa Cruz Wharf and Santa Cruz Beach Boardwalk), Murray Street, 7th Avenue, and 17th Avenue. The existing noise sources include typical noise associated with those land uses and vehicular traffic.

Noise-sensitive receptors are generally defined as locations where people reside or where the presence of unwanted sound may adversely affect the use of the land. Noise-sensitive receptors typically include residences, hospitals, schools, guest lodging, and libraries. Noise-sensitive receptors adjacent to the project area include guest lodging along Segment 8 and residences along Segment 9.

Noise is based on adverse or unwanted sound that may interfere with communication, work, sleep or recreation. Both the City and County municipal code include noise ordinances. Construction activities required for the proposed project are prohibited between the hours between 10:00 p.m. to 8:00 a.m., pursuant to the City of Santa Cruz Municipal Code (Chapter 9.36) and the County of Santa Cruz Municipal Code (Chapter 8.30).

Impact Analysis

a. Would the project result in 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?

Project construction would temporarily increase noise levels adjacent to the construction site in the project area. Construction activities along Segment 8 would be minimal in nature because the project involves improving existing bicycle and pedestrian facilities, rather than creating a new trail. Construction activities along Segment 9 would be more extensive in nature because it includes construction of a new trail.

Additionally, the proposed project (*Ultimate Trail*) would include construction of retaining walls and viaducts. The optional first phase (*Interim Trail*) would also include track and tie removal, as well as the future construction phase for the *Ultimate Trail*, whereby the trail is removed, the tracks and ties are re-installed, and a new trail is constructed alongside the tracks, requiring retaining walls and viaducts.

However, due to the linear nature of the project and the limited size of the construction area at any given time, only a few pieces of equipment would operate simultaneously at any given time. Noise levels from the anticipated construction fleet will be determined, based on typical equipment noise levels determined by the FHWA Roadway Construction Noise Model (RCNM), as part of the EIR analysis. The project would be required to comply with the City of Santa Cruz Noise Ordinance Section 9.36.010 and the County of Santa Cruz Municipal Code Section 8.30.010 that both prohibits offensive noise between the hours of 10:00 p.m. and 8:00 a.m. Additional mitigation would likely include preparation and implementation of a Noise Control Plan for construction activities. Therefore, the impact would be **less than significant with mitigation**.

b. Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?

Project construction could require use of equipment, such as a jackhammer, that could potentially generate groundborne vibration. However, the use of a jackhammer would be short-term in duration and would not cause excessive groundborne vibration or associated noise levels. Use of pile driving equipment is not anticipated. Therefore, the impact would be **less than significant**.

c. Would the project, 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, expose people residing or working in the project area to excessive noise levels?

The project is not located within the vicinity of a private airstrip or an airport land use plan, or within two miles of a public airport. Therefore, there would be **no impact** caused by the project.

2.4.14 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

Environmental Setting

The project area includes the Santa Cruz Branch Rail Line extending through urban/suburban areas that are primarily developed with commercial, industrial, recreational, and residential land uses in both the City and unincorporated County.

Impact Analysis

a. Would the project 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)?

The project would not induce unplanned population growth, either directly by constructing new homes or businesses, or indirectly by extending roads or other infrastructure that would support further population growth in the area. Constructing a new trail would not promote growth in the surrounding project area, and there would be **no impact**.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project would be located in the existing rail right of way, with small portions located within public streets. There would be no property takes required, and no housing would be displaced. Therefore, no people or houses would be displaced as a result of project activities, and there would be **no impact**.

2.4.15 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☒	☐

Environmental Setting

The project extends through both the jurisdiction of the City and the County (**Figure 1**).

Segment 8 and the portion of Segment 9 located in the City of Santa Cruz would be served by the City of Santa Cruz Fire Department for fire protection services, the City of Santa Cruz Police Department for police protection services, and AMR for emergency medical services. The closest fire stations to Segment 8 are the Santa Cruz Fire Department Station 1 and the Santa Cruz Fire Department Lifeguard Headquarters, located approximately 0.8 mile north and 0.2 mile south respectively of the western portion of Segment 8, as well as the Santa Cruz Fire Department Station 2 which is approximately 0.85 mile north of Segment 8. The closest police station to Segment 8 is the Santa Cruz Police Department, approximately 0.4 mile north of the start of Segment 8. The closest AMR site to Segment 8 is approximately 6.75 miles north.

The portion of Segment 9 located in the County of Santa Cruz would be served by the Central Fire District (CFD) for fire protection services, the City of Santa Cruz Police Department for police protection services, and American Medical Response (AMR) for emergency medical services. The eastern portion of Segment 9 is approximately 400 feet north of the Central Fire District Station 1, approximately 2.3 miles east of the City of Santa Cruz Police Department, and approximately 6.5 miles south of the nearest AMR site.

Table 1 provides the estimated response times of emergency service providers to the trail alignment, as reported in the Final EIR for the Monterey Bay Sanctuary Scenic Trail Network Project (RTC 2013).

Table 1. Emergency Services and Response Times to the Trail Alignment

Service Provider	Existing Response Time (minutes)	Expected Response Time to Project (minutes)	Within Average Response Time?
City of Santa Cruz Fire Department	1-10	5	Yes
Central Fire District	5	5	Yes
City of Santa Cruz Police Department	2-3	2-4	Yes
AMR	18-30	16-30	Yes

Source: RTC 2013.

Impact Analysis

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

Fire protection?
Police protection?
Parks?
Schools?
Other public facilities?

The new trail would not directly or indirectly generate additional residents or employees that would require new or physically altered public facilities. Once the new trail is constructed and in use, existing residents or employees in the community could use the trail to bike or walk to their destination, resulting in increased use of the SCBRL corridor by bicyclists and pedestrians. In addition to people using the trail for recreation and transportation, the trail corridor could be used by transient or unhoused people resting or loitering.

The increased human activity along the trail could result in additional calls for fire and police protection services to the SCBRL corridor. However, any increase in fire and police calls is not expected to result in the need to increase staff levels to the point of warranting new or physically altered fire stations, police stations, or other government facilities to maintain acceptable service ratios, response times or performance objectives.

The new trail would provide an additional travel option for accessing parks, schools, and other public facilities (e.g., libraries). However, any additional use of these facilities is not expected to result in the need to expand or physically alter these facilities, the construction of which could cause environmental impacts.

The EIR analysis will address public safety concerns, but it is anticipated that the physical impact on the environment would be **less than significant**.

2.4.16 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☒	☐	☐	☐

Environmental Setting

The City and County have existing networks of parks and recreation facilities, as described in the County General Plan (1994) and City General Plan (2012a). There are several parks and recreation facilities within 0.25 mile of the trail alignment, including Chestnut Park, Depot Park, Santa Cruz Beach Boardwalk and Main Beach, Beach Flats Park, Santa Cruz Riverwalk, Twin Lakes County Park and State Beach, and Simpkins Swim Center.

Impact Analysis

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

The new trail would improve bicycle/pedestrian (non-vehicular) access to existing parks and recreation facilities, which could slightly increase the use of the facilities along the trail alignment. However, it is not anticipated that the increased use would result in the physical deterioration of existing recreation facilities Therefore, impacts would be **less than significant**.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The project includes improvements to the existing bicycle and pedestrian facilities along Segment 8, and it includes a new recreation trail in Segment 9. The potential adverse physical effects of the improvements to the existing facilities and construction of the new trail are discussed throughout this Initial Study document.

2.4.17 Transportation

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☒	☐	☐	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☒	☐	☐	☐
d. Result in inadequate emergency access?	☒	☐	☐	☐

Environmental Setting

The City of Santa Cruz's General Plan includes goals, policies, and actions such as Action M2.3.1 to design for an accommodate multiple transportation modes and Goal M4 to create a citywide interconnected system of safe, inviting, and accessible pedestrian ways and bikeways. The City of Santa Cruz Active Transportation Plan contains objectives and policies to establish a comprehensive bicycle and pedestrian transportation system integrated with the existing City network and connected to the countywide network (Objective 1) and to ensure sidewalks are appropriately sized for their use (Policy 2.7) (City of Santa Cruz 2017).

The County of Santa Cruz's General Plan Circulation Element includes policies and objectives to encourage bicycle use (Objective 3.8), to coordinate regional continuity of bikeways (Policy 3.8.5), and to encourage pedestrian travel as a viable means of transportation by increasing and improving pedestrian facilities (Objective 3.10) (County of Santa Cruz General Plan 1994).

The Santa Cruz County Regional Transportation Commission's (RTC's) 2040 Santa Cruz County Regional Transportation Plan (RTP) includes Policy 1.3 to improve transportation infrastructure and multimodal access and Policy 1.4 to ensure network connectivity in the bicycle, pedestrian, and transit networks (RTC 2018).

The trail alignment extends alongside vehicular roads including Beach Street and Murray Street. A Class IV Cycle Track exists along the area proposed for Segment 8. Where the San Lorenzo River Parkway Trestle Trail meets East Cliff Drive at its eastern boundary, there are no formal bicycle paths along the stretch of Segment 9 that follows Murray Street. Where the trail alignment deviate away from Murray Street to follow the Santa Cruz Branch Rail line, there are no existing bicycle paths (RTC 2016).

Pedestrian access along the trail alignment extends from the beginning of Segment 8 as a sidewalk parallel to Beach Street, adjacent to the Santa Cruz Beach Boardwalk to the portion of Segment 9 right after the Santa Cruz Small Craft Harbor where Murray Street turns into Eaton Street.

Impact Analysis

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The project would implement all of the goals and policies mentioned in the Setting section as it would include a formal multimodal trail that would facilitate alternative transportation modes such as walking and bicycling along Segments 8 and 9. The trail alignments would furthermore expand existing alternative transportation networks by connecting the existing Class IV Cycle Track and SLR Trestle Trail to the full length of Segments 8 and 9, as discussed throughout this document. In addition, as discussed under criterion (c) below, the project would implement safety design features which would enhance the safety on existing portions of the trail. As shown through the goals, policies, and objectives included in relevant plans and policies addressing the circulation system, the project would not conflict with the current relevant plans and policies of the County and City of Santa Cruz. Therefore, there would be **no impact**.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

CEQA Guidelines section 15064.3(b) defines the criteria used to analyze transportation impacts associated with land use and transportation projects. The Coastal Rail Trail Segments 8 and 9 project would fall under the transportation projects category. The project would not likely generate new vehicle trips because it is anticipated trail users would travel from their home to the trail on foot or bike (rather than driving) because most use would be local and there are no planned new parking areas. Therefore, impacts would likely be **less than significant** and will be discussed further in the EIR.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The trail alignment would follow a relatively straight alignment except for the existing Americans with Disabilities Act-compliant (ADA) ramp at the east end of the Boardwalk connecting the alignment to the existing SLR Trestle Trail and a multi-use path crossing at 7th Avenue, which would both introduce sharp turns in the planned trail.

The project would increase hazards associated with bicycle/pedestrian and vehicular interactions where the trail crosses a heavily traveled roadway. However, the project includes design features such as multiuse path crossings with features such as signal modification, rectangular rapid-flashing beacons (RRFB), and crossbike striping which would reduce the risk associated with areas where the trail

alignments would interact with vehicle-dominated roadways. Because the project includes design features for safety, this impact is likely **less than significant** and will be discussed further in the EIR.

d. Would the project result in inadequate emergency access?

As described in Section 2.4.15, *Public Services*, the new trail would likely have adequate services from existing public service providers including fire, police, and emergency medical services in terms of capacity. Further analysis will be undertaken in the EIR to confirm existing capacity to serve the project. However, minimum trail widths would be required to accommodate emergency vehicles. According to the 2021 International Fire Code Appendix D, fire apparatus access roads shall be a minimum width of 20 feet (ICC 2021). The Central Fire District indicated that a trail width of 10 to 12 feet would be sufficient, however emergency access will be further analyzed in the EIR to determine if adequate access would be provided (RTC 2013).

Under the *Trail Next to Rail* alignment, a portion of Segment 9 could be reduced to eight feet in areas with existing constrained conditions, which may result in inadequate emergency access. Under the *Trail on the Rail Line* alignment, the width of the trail has not been determined; therefore, the width of the trail may not be adequate for emergency access. Inadequate emergency access could be a **potentially significant impact,** and this will be discussed further in the EIR.

2.4.18 Tribal Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. 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:				
i. 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	☐	☒	☐	☐
ii. 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?	☐	☒	☐	☐

Environmental Setting

Penutian groups settled around the Monterey Bay Area region at approximately 500 B.C., displacing earlier Hokan populations (RTC 2013). The descendants of the native groups who lived between the Carquinez Strait and the Monterey area prefer to be called Ohlone. The Ohlone were organized according to politically independent land-holding groups referred to by anthropologists as "tribelets." Households grouped together to form villages, and villages combined to form tribelets. Tribelets exchanged trade goods such as obsidian, shell beads, and baskets; participated in ceremonial and religious activities together; intermarried; and could have extensive reciprocal obligations to one another involving resource collection (RTC 2019). At the time of the arrival of the Spanish and establishment of Mission Santa Cruz in 1791, Santa Cruz was within the territory of the Uypi tribelet (RTC 2019).

Impact Analysis

a. 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:

i. **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**

ii. **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.**

No specific tribal cultural resources have been identified along the trail alignment. However, during construction ground disturbance activities, there is potential for encountering previously undiscovered cultural resources of Native American origin that could be considered tribal cultural resources. Ground disturbing activities would include excavation of material sources, grading, and installation of signs. Consistent with Assembly Bill (AB) 52, the lead agency must consult with traditionally and culturally affiliated Native American tribes to determine if the trail alignments would result in a substantial adverse change in the significance of a tribal cultural resource. Therefore, because of the potential to encounter previously undiscovered tribal cultural resources during ground disturbing activities and the need to consult with tribes pursuant to AB 52, impacts would likely be **less than significant with mitigation** (e.g., Native American monitoring during ground-disturbing activities within previously undisturbed native soil. As such, this impact will be discussed further in the EIR.

2.4.19 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Environmental Setting

Due to the cross-jurisdictional nature of the trail alignment, some utilities and service systems would differ depending on the segment (i.e., whether the segment is located in the County or City of Santa Cruz). Segment 8 is located wholly in the City of Santa Cruz and would be served by the utilities and services that serve the City. As Segment 9 is located in both the City and County of Santa Cruz, the western part of Segment 9 would be served by the City's utilities and service systems and the eastern part of Segment 9 would be served by the County's utilities and service systems (RTC 2013).

Segments 8 and 9 would be both be served by the following utilities and service systems: Pacific Gas and Electric (PG&E) for natural gas and electricity service, Green Waste Recovery for solid waste services, and the City of Santa Cruz Water District for water services.

Solid waste from Segment 8 and the western portion of Segment 9, in the City of Santa Cruz, would be disposed of at the Resource Recovery Facility (RRF) which includes a Class III sanitary landfill at 605 Dimeo Lane, three miles north of the City's limits off of Highway 1 (City of Santa Cruz 2011; City of Santa Cruz 2021a). Based on continued waste reduction and projections, the landfill is estimated to have sufficient capacity through the year 2058 (City of Santa Cruz 2011).

Solid waste generated along the eastern portion of Segment 9, in Santa Cruz County, would be disposed of at the Buena Vista Landfill, a Class III landfill which accepts 450 tons of refuse on a daily basis both directly and from the Ben Lomond Transfer Station (County of Santa Cruz 2021). The Buena Vista Landfill is expected to close by 2035, after which solid waste generated within the County would go to a larger landfill in Marina which has another 100 years until it reaches capacity (Clark 2015).

The eastern portion of Segment 9's wastewater and stormwater drainage service would be under the jurisdiction of the Santa Cruz County Sanitation District. The Santa Cruz County Sanitation District pretreats and transmits all sewage to the City of Santa Cruz for treatment and disposal (Santa Cruz Local Agency Formation Commission 2011). Segment 8 and the western part of Segment 9 would be served by the City of Santa Cruz for its wastewater and stormwater collection and treatment services.

The City of Santa Cruz Water District (SCWD) is projected to have sufficient supplies through 2030 under normal year conditions (City of Santa Cruz 2016b). In addition, the City of Santa Cruz collaborated with the Soquel Creek Water District and Scotts Valley Water District using in-lieu water exchanges and aquifer storage and recovery to actively recharge and rest aquifers to be extracted and returned to SCWD during dry years (City of Santa Cruz 2021b).

Impact Analysis

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The new trail would not include any features that require new or expanded water, wastewater treatment, electric power, natural gas or telecommunications facilities. Thus, the project would not substantially increase demand of wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunications facilities to the point where relocation or construction of new or expanded utilities would be necessary. As described in the Hydrology/Water Quality section, the new trail in Segment 9 would introduce new impervious surface that could result in minor changes in stormwater runoff and drainage patterns. The project design will include some drainage facilities to direct flows to prevent localized flooding, but the flows would not likely warrant construction or relocation of stormwater facilities which could cause significant environmental effects. This will be confirmed in a hydrology technical study being prepared for the project, and any recommended mitigation will be identified in the EIR. Therefore, the impact is considered **less than significant with mitigation**.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The project would not require water supplies because it does not include landscaping, water fountains, restrooms, or other water-using features. Therefore, the impact would be **less than significant**.

c. Would the project 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?

The project does not include building new restrooms or other wastewater generating features. As such, the trail would not generate wastewater and therefore would not exceed wastewater treatment requirements or require the construction of new wastewater treatment facilities. However, it would be expected that trail users would use existing public restrooms and thus contribute to wastewater production. The wastewater produced in the project vicinity via use of existing restrooms would be treated by the Santa Cruz Wastewater Treatment Facility. The Santa Cruz Wastewater Treatment Facility treats less than 10 million gallons per day (MGD) of wastewater and has a capacity of 17 MGD (City of Santa Cruz 2021c). Any wastewater produced by the trail users would be nominal and within the capability of the Santa Cruz Wastewater Treatment Facility. Therefore, the impact to wastewater treatment facilities and providers would be **less than significant**.

d. Would the project 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. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The project does not include locating any trash and recycling bins along the trail alignment. The potential impacts associated with the project's potential for solid waste generation will be discussed further in the EIR. It is anticipated that any potential impacts would be **less than significant** or **less than significant with mitigation**.

2.4.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
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?	☐	☐	☒	☐

Environmental Setting

The project area is a 2.2-mile portion of the SCBRL extending through the built-up urban area of the City and County. This area is almost completely flat, except for a section at the beginning of Segment 9, where the trail ascends from the SLR Trestle Bridge. The project is not located in or near mapped state responsibility areas or lands classified as very high fire hazard severity zones

Impact Analysis

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

The County of Santa Cruz Emergency Management Plan has identified a course of actions to follow in the event of an emergency. The project would not impair or inhibit any actions within an emergency evacuation plan. Once construction of the trail is completed, emergency access would return to pre-project conditions. Therefore, impacts to an emergency response plan or evacuation plan would be **less than significant**.

b. Would the project, 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?

The trail would be constructed along the existing right of way of the rail line corridor, which is not subject to dramatic changes in slope in this area, and prevailing winds are limited to sea breezes due to the close proximity to the ocean. The project would not exacerbate wildfire risk or expose project occupants to pollutant concentrations due to wildfire. Therefore, impacts are **less than significant**.

c. Would the project 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?

The project would not require the installation or maintenance of wildfire infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that would exacerbate the fire risk or impact the environment. The project would involve routine maintenance of vegetated portions of the trail, including weed removal, and tree/shrub trimming, that would prevent overgrowth that could potentially fuel wildfire. Therefore, the project would not result in additional project elements that would exacerbate wildfire risks, and the potential impact would be **less than significant**.

d. Would the project 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?

The City of Santa Cruz has mapped *mutual threat zones* that pose a significant fire hazard risk within the City (City of Santa Cruz Local Hazard Mitigation Plan 2012 Update). The project area is not located within a mutual threat zone, State Responsibility Area, a Very High Fire Hazard Severity Zone, or a County-mapped Critical Fire Hazard Area (County Santa Cruz 2021). The project area is relatively flat in nature and is far from any elevated features. Therefore, it is unlikely that any downslope or downstream impacts associated with wildfires would result from the project. Therefore, the potential impact would be **less than significant**.

2.4.21 Mandatory Findings of Significance

Does the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
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 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?	☐	☒	☐	☐

Note: Authority cited: Sections 21083 and 21083.05, Public Resources Code. Reference: Section 65088.4, Gov. Code; Sections 21080(c), 21080.1, 21080.3, 21083, 21083.05, 21083.3, 21093, 21094, 21095, and 21151, Public Resources Code; Sundstrom v. County of Mendocino,(1988) 202 Cal.App.3d 296; Leonoff v. Monterey Board of Supervisors, (1990) 222 Cal.App.3d 1337; Eureka Citizens for Responsible Govt. v. City of Eureka (2007) 147 Cal.App.4th 357; Protect the Historic Amador Waterways v. Amador Water Agency (2004) 116 Cal.App.4th at 1109; San Franciscans Upholding the Downtown Plan v. City and County of San Francisco (2002) 102 Cal.App.4th 656.

Impact Analysis

a. Does the project 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?

The project area is located within an urban/suburban environment that is predominately developed with commercial, industrial, recreational, and residential land uses along SCBRL. The discussions contained herein demonstrate that with the implementation of BMPs and mitigation, the project would not substantially degrade the quality of the environment, cause adverse impacts to wildlife species or sensitive habitats, or eliminate important examples of California prehistory. Therefore, impacts would be **less than significant with mitigation**.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

The project is consistent with the policies set forth in the City of Santa Cruz General Plan 2030 EIR and the County of Santa Cruz General Plan 1994, and would not include impacts that are considered cumulatively considerable. The General Plan EIR identifies population, traffic and noise to be potentially significant due to the growth in population resulting from proposed development project throughout the City. The proposed project would contribute to a potential net decrease of traffic and associated noise, due to creating the availability of an alternative transportation method by a pedestrian and bike path throughout the City of Santa Cruz. Therefore, project impacts would be **less than significant**.

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

Implementation of the project could cause temporary construction-related impacts to noise, air quality and hazardous materials. However, these would be temporary in nature and would not continue past the construction phase of the project. Therefore, the proposed project would not cause any substantial adverse effects on human beings, and the impacts would be **less than significant with mitigation**.

Appendix D.

Air Quality and GHG Modeling Assumptions for Coastal Rail Trail Segments 8 and 9

- Road Construction Emissions Model – Ultimate Trail Configuration
- Road Construction Emissions Model – Optional Interim Trail Part 1
- Road Construction Emissions Model – Optional Interim Trail Part 2

This page intentionally left blank.

Road Construction Emissions Model, Version 9.0.0 - Ultimate Trail Configuration

Daily Emission Estimates for -> Segment 8 9 Ultimate

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.30	22.44	20.64	10.93	0.93	10.00	2.94	0.86	2.08	0.05	4,797.62	1.08	0.07	4,844.98
Grading/Excavation	3.35	30.77	34.20	11.47	1.47	10.00	3.36	1.28	2.08	0.09	8,556.87	1.67	0.35	8,702.15
Drainage/Utilities/Sub-Grade	3.26	33.23	29.73	11.29	1.29	10.00	3.24	1.16	2.08	0.07	7,125.41	1.57	0.11	7,197.00
Paving	2.19	24.46	19.04	0.88	0.88	0.00	0.78	0.78	0.00	0.05	5,098.98	1.05	0.11	5,156.77
Maximum (pounds/day)	3.35	33.23	34.20	11.47	1.47	10.00	3.36	1.28	2.08	0.09	8,556.87	1.67	0.35	8,702.15
Total (tons/construction project)	0.80	7.88	7.66	2.58	0.33	2.24	0.76	0.30	0.47	0.02	1,890.57	0.39	0.05	1,916.07

Notes:

Project Start Year ->	2023
Project Length (months) ->	24
Total Project Area (acres) ->	3
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	360	40
Grading/Excavation	92	0	425	0	880	40
Drainage/Utilities/Sub-Grade	0	9	0	30	760	40
Paving	0	24	0	60	600	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Segment 8 9 Ultimate

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.06	0.59	0.55	0.29	0.02	0.26	0.08	0.02	0.05	0.00	126.66	0.03	0.00	116.04
Grading/Excavation	0.35	3.25	3.61	1.21	0.16	1.06	0.35	0.13	0.22	0.01	903.61	0.18	0.04	833.66
Drainage/Utilities/Sub-Grade	0.30	3.07	2.75	1.04	0.12	0.92	0.30	0.11	0.19	0.01	658.39	0.15	0.01	603.29
Paving	0.09	0.97	0.75	0.03	0.03	0.00	0.03	0.03	0.00	0.00	201.92	0.04	0.00	185.26
Maximum (tons/phase)	0.35	3.25	3.61	1.21	0.16	1.06	0.35	0.13	0.22	0.01	903.61	0.18	0.04	833.66
Total (tons/construction project)	0.80	7.88	7.66	2.58	0.33	2.24	0.76	0.30	0.47	0.02	1890.57	0.39	0.05	1,738.24

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Segment 8 9 Ultimate	
Construction Start Year	2023	Enter a Year between 2014 and 2040 (inclusive)
Project Type	1	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	24.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	2.13	miles
Total Project Area	3.00	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00		92.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade	20.00	9.00	
	Paving	20.00	24.00	

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		2.40		1/1/2023
Grading/Excavation		9.60		3/15/2023
Drainage/Utilities/Sub-Grade		8.40		1/1/2024
Paving		3.60		9/13/2024
Totals (Months)	24			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation	85.00	30.00		5	425.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.04	0.40	3.36	0.11	0.05	0.02	1,617.89	0.00	0.25	1,693.73
Tons per const. Period - Grading/Excavation	0.00	0.04	0.36	0.01	0.01	0.00	170.85	0.00	0.03	178.86
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.04	0.36	0.01	0.01	0.00	170.85	0.00	0.03	178.86

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		1	30.00
Miles/round trip: Paving		30.00		2	60.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.03	0.24	0.01	0.00	0.00	112.71	0.00	0.02	117.99
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	10.41	0.00	0.00	10.90
Pounds per day - Paving	0.01	0.06	0.48	0.02	0.01	0.00	225.42	0.00	0.04	235.98
Tons per const. Period - Paving	0.00	0.00	0.02	0.00	0.00	0.00	8.93	0.00	0.00	9.34
Total tons per construction project	0.00	0.00	0.04	0.00	0.00	0.00	19.34	0.00	0.00	20.25

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions User Input	User Override of Worker Commute Default Values	Default Values	Calculated Daily Trips	Calculated Daily VMT
Miles/ one-way trip		20		
One-way trips/day		2		
No. of employees: Grubbing/Land Clearing		9	18	360.00
No. of employees: Grading/Excavation		22	44	880.00
No. of employees: Drainage/Utilities/Sub-Grade		19	38	760.00
No. of employees: Paving		15	30	600.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Grading/Excavation (grams/mile)	0.02	0.91	0.07	0.05	0.02	0.00	317.66	0.00	0.01	319.68
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Paving (grams/mile)	0.01	0.84	0.06	0.05	0.02	0.00	306.70	0.00	0.01	308.54
Grubbing/Land Clearing (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Grading/Excavation (grams/trip)	1.04	2.75	0.29	0.00	0.00	0.00	68.26	0.07	0.03	79.50
Draining/Utilities/Sub-Grade (grams/trip)	0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Paving (grams/trip)	0.98	2.66	0.27	0.00	0.00	0.00	65.99	0.07	0.03	76.61
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.05	0.83	0.07	0.04	0.02	0.00	254.82	0.01	0.01	256.88
Tons per const. Period - Grubbing/Land Clearing	0.00	0.02	0.00	0.00	0.00	0.00	6.73	0.00	0.00	6.78
Pounds per day - Grading/Excavation	0.13	2.04	0.17	0.09	0.04	0.01	622.90	0.01	0.02	627.92
Tons per const. Period - Grading/Excavation	0.01	0.22	0.02	0.01	0.00	0.00	65.78	0.00	0.00	66.31
Pounds per day - Drainage/Utilities/Sub-Grade	0.10	1.63	0.13	0.08	0.03	0.01	519.41	0.01	0.01	523.38
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.15	0.01	0.01	0.00	0.00	47.99	0.00	0.00	48.36
Pounds per day - Paving	0.08	1.29	0.10	0.06	0.03	0.00	410.06	0.01	0.01	413.20
Tons per const. Period - Paving	0.00	0.05	0.00	0.00	0.00	0.00	16.24	0.00	0.00	16.36
Total tons per construction project	0.03	0.44	0.04	0.02	0.01	0.00	136.74	0.00	0.00	137.81

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions User Input	User Override of Default # Water Trucks	Program Estimate of Number of Water Trucks	User Override of Truck Round Trips/Vehicle/Day	Default Values Round Trips/Vehicle/Day	Calculated Trips/day	User Override of Miles/Round Trip	Default Values Miles/Round Trip	Calculated Daily VMT
Grubbing/Land Clearing - Exhaust		1		5	5		8.00	40.00
Grading/Excavation - Exhaust		1		5	5		8.00	40.00
Drainage/Utilities/Subgrade		1		5	5		8.00	40.00
Paving		1		5	5		8.00	40.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Grading/Excavation (grams/mile)	0.04	0.43	3.54	0.12	0.05	0.02	1,726.74	0.00	0.27	1,807.67
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Paving (grams/mile)	0.04	0.43	3.49	0.12	0.05	0.02	1,704.13	0.00	0.27	1,784.00
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.36	0.01	0.00	0.00	152.27	0.00	0.02	159.41
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	4.02	0.00	0.00	4.21
Pounds per day - Grading/Excavation	0.00	0.04	0.36	0.01	0.00	0.00	152.27	0.00	0.02	159.41
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	16.08	0.00	0.00	16.83
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.36	0.01	0.00	0.00	150.28	0.00	0.02	157.32
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.03	0.00	0.00	0.00	13.89	0.00	0.00	14.54
Pounds per day - Paving	0.00	0.04	0.36	0.01	0.00	0.00	150.28	0.00	0.02	157.32
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	5.95	0.00	0.00	6.23
Total tons per construction project	0.00	0.01	0.09	0.00	0.00	0.00	39.94	0.00	0.01	41.81

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		1.00	10.00	0.26	2.08	0.05
Fugitive Dust - Grading/Excavation		1.00	10.00	1.06	2.08	0.22
Fugitive Dust - Drainage/Utilities/Subgrade		1.00	10.00	0.92	2.08	0.19

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.40	0.01	0.01	0.00	121.96	0.04
1.00			Model Default Tier	Air Compressors	0.19	1.81	1.30	0.07	0.07	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.25	2.74	1.94	0.10	0.10	0.00	444.50	0.02
1.00			Model Default Tier	Cranes	0.26	1.38	2.86	0.12	0.11	0.00	419.11	0.14
	1		Model Default Tier	Crawler Tractors	0.33	1.68	3.84	0.15	0.14	0.01	568.70	0.18
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Excavators	0.14	2.44	1.16	0.06	0.05	0.00	375.08	0.12
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.23	2.75	2.04	0.10	0.10	0.00	467.28	0.02
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.38	2.47	2.68	0.10	0.09	0.01	959.92	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Tractors/Loaders/Backhoes	0.34	5.02	3.46	0.17	0.16	0.01	678.55	0.22
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grubbing/Land Clearing	pounds per day	2.24	21.57	20.21	0.88	0.84	0.05	4,390.52	1.08
Grubbing/Land Clearing	tons per phase	0.06	0.57	0.53	0.02	0.02	0.00	115.91	0.03

Grading/Excavation	Default Number of Vehicles	Mitigation Option Override of Default			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.40	0.01	0.01	0.00	121.96	0.04
1.00			Model Default Tier	Air Compressors	0.19	1.81	1.30	0.07	0.07	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.25	2.74	1.94	0.10	0.10	0.00	444.50	0.02
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.33	1.68	3.84	0.15	0.14	0.01	568.70	0.18
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Excavators	0.14	2.44	1.16	0.06	0.05	0.00	375.08	0.12
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.23	2.75	2.04	0.10	0.10	0.00	467.28	0.02
	1		Model Default Tier	Graders	0.29	1.27	3.49	0.11	0.10	0.00	480.64	0.16
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.38	2.47	2.68	0.10	0.09	0.01	959.92	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.23	2.78	2.42	0.13	0.12	0.00	381.16	0.12
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rubber Tired Loaders	0.20	1.13	1.99	0.07	0.06	0.00	454.17	0.15
1.00	2		Model Default Tier	Scrapers	0.59	4.60	6.21	0.24	0.22	0.01	1,102.60	0.36
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.23	3.35	2.30	0.11	0.10	0.00	452.37	0.15
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Grading/Excavation	pounds per day	3.17	28.30	30.31	1.26	1.19	0.06	6,163.80	1.65
	Grading/Excavation	tons per phase	0.34	2.99	3.20	0.13	0.13	0.01	650.90	0.17

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.39	0.01	0.01	0.00	121.96	0.04
	1		Model Default Tier	Air Compressors	0.18	1.81	1.22	0.06	0.06	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.04	0.23	0.28	0.01	0.01	0.00	37.89	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.23	2.74	1.81	0.08	0.08	0.00	444.50	0.02
1.00			Model Default Tier	Cranes	0.25	1.33	2.63	0.11	0.10	0.00	419.11	0.14
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.21	2.75	1.91	0.08	0.08	0.00	467.28	0.02
	1		Model Default Tier	Graders	0.27	1.24	3.12	0.10	0.09	0.00	480.38	0.16
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.37	2.44	2.50	0.09	0.08	0.01	960.26	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.14	2.17	1.31	0.06	0.06	0.00	341.37	0.11
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.03	0.16	0.19	0.01	0.01	0.00	25.86	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.23	2.79	1.93	0.09	0.09	0.00	467.28	0.02
1.00			Model Default Tier	Rollers	0.11	1.39	1.14	0.06	0.06	0.00	190.61	0.06
	1		Model Default Tier	Rough Terrain Forklifts	0.08	1.72	1.01	0.03	0.03	0.00	250.30	0.08
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Scrapers	0.57	4.48	5.77	0.23	0.21	0.01	1,101.82	0.36
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.32	5.03	3.26	0.15	0.14	0.01	678.98	0.22
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Drainage/Utilities/Sub-Grade	pounds per day		3.15	31.54	29.00	1.19	1.12	0.07	6,343.02	1.56
Drainage/Utilities/Sub-Grade	tons per phase		0.29	2.91	2.68	0.11	0.10	0.01	586.09	0.14

Paving	Default Number of Vehicles	Mitigation Option Override of Default			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.39	0.01	0.01	0.00	121.96	0.04
1.00			Model Default Tier	Air Compressors	0.18	1.81	1.22	0.06	0.06	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.04	0.23	0.28	0.01	0.01	0.00	37.89	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.23	2.74	1.81	0.08	0.08	0.00	444.50	0.02
1.00			Model Default Tier	Cranes	0.25	1.33	2.63	0.11	0.10	0.00	419.11	0.14
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.21	2.75	1.91	0.08	0.08	0.00	467.28	0.02
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.37	2.44	2.50	0.09	0.08	0.01	960.26	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.14	2.17	1.31	0.06	0.06	0.00	341.37	0.11
	1		Model Default Tier	Paving Equipment	0.12	1.93	1.12	0.05	0.05	0.00	295.85	0.10
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rollers	0.11	1.39	1.14	0.06	0.06	0.00	190.61	0.06
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.32	5.03	3.26	0.15	0.14	0.01	678.98	0.22
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Paving	pounds per day	2.10	23.08	18.10	0.79	0.75	0.05	4,313.22	1.04
	Paving	tons per phase	0.08	0.91	0.72	0.03	0.03	0.00	170.80	0.04
Total Emissions all Phases (tons per construction period) =>			0.77	7.39	7.13	0.30	0.28	0.02	1,523.71	0.39

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.50
0.00	0.00
0.00	0.00
0.00	446.04
0.00	423.63
0.01	574.84
0.00	0.00
0.00	379.12
0.00	0.00
0.00	468.84
0.00	0.00
0.00	0.00
0.01	970.25
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	685.85
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.04	4,428.70
0.00	116.92

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.50
0.00	0.00
0.00	0.00
0.00	446.04
0.00	0.00
0.01	574.84
0.00	0.00
0.00	379.12
0.00	0.00
0.00	468.84
0.00	485.82
0.00	0.00
0.01	970.25
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	385.27
0.00	0.00
0.00	0.00
0.00	459.08
0.01	1,114.48
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.00	457.23
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	6,221.09
0.01	656.95

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.48
0.00	0.00
0.00	38.08
0.00	446.02
0.00	423.62
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	468.80
0.00	485.56
0.00	0.00
0.01	970.60
0.00	0.00
0.00	0.00
0.00	0.00
0.00	345.05
0.00	0.00
0.00	25.99
0.00	0.00
0.00	468.84
0.00	192.66
0.00	253.00
0.00	0.00
0.00	0.00
0.01	1,113.70
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	686.28
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	6,398.31
0.01	591.20

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.48
0.00	0.00
0.00	38.08
0.00	446.02
0.00	423.62
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	468.80
0.00	0.00
0.00	0.00
0.01	970.60
0.00	0.00
0.00	0.00
0.00	0.00
0.00	345.05
0.00	299.04
0.00	0.00
0.00	0.00
0.00	0.00
0.00	192.66
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	686.28
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.04	4,350.26
0.00	172.27
0.01	1,537.34

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	6.00	8
Air Compressors		78	6.00	8
Bore/Drill Rigs		221	6.00	8
Cement and Mortar Mixers		9	6.00	8
Concrete/Industrial Saws		81	6.00	8
Cranes		231	6.00	8
Crawler Tractors		212	6.00	8
Crushing/Proc. Equipment		85	6.00	8
Excavators		158	6.00	8
Forklifts		89	6.00	8
Generator Sets		84	6.00	8
Graders		187	6.00	8
Off-Highway Tractors		124	6.00	8
Off-Highway Trucks		402	6.00	8
Other Construction Equipment		172	6.00	8
Other General Industrial Equipment		88	6.00	8
Other Material Handling Equipment		168	6.00	8
Pavers		130	6.00	8
Paving Equipment		132	6.00	8
Plate Compactors		8	6.00	8
Pressure Washers		13	6.00	8
Pumps		84	6.00	8
Rollers		80	6.00	8
Rough Terrain Forklifts		100	6.00	8
Rubber Tired Dozers		247	6.00	8
Rubber Tired Loaders		203	6.00	8
Scrapers		367	6.00	8
Signal Boards		6	6.00	8
Skid Steer Loaders		65	6.00	8
Surfacing Equipment		263	6.00	8
Sweepers/Scrubbers		64	6.00	8
Tractors/Loaders/Backhoes		97	6.00	8
Trenchers		78	6.00	8
Welders		46	6.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0 - Interim Trail - Part 1 (Rail Removal and Interim Trail Construction)

Daily Emission Estimates for -> Segment 8 9 Interim Trail														
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**Total PM10 (lbs/day)**	**Exhaust PM10 (lbs/day)**	**Fugitive Dust PM10 (lbs/day)**	**Total PM2.5 (lbs/day)**	**Exhaust PM2.5 (lbs/day)**	**Fugitive Dust PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	2.05	22.04	17.40	10.73	0.73	10.00	2.74	0.66	2.08	0.05	4,777.29	1.08	0.07	4,823.99
Grading/Excavation	2.93	29.53	27.66	11.15	1.15	10.00	3.07	0.99	2.08	0.08	8,152.02	1.66	0.29	8,279.42
Drainage/Utilities/Sub-Grade	3.02	32.43	26.68	11.12	1.12	10.00	3.09	1.01	2.08	0.07	7,082.45	1.56	0.11	7,153.01
Paving	2.06	24.15	17.27	0.77	0.77	0.00	0.68	0.68	0.00	0.05	4,951.33	1.04	0.09	5,002.98
Maximum (pounds/day)	3.02	32.43	27.66	11.15	1.15	10.00	3.09	1.01	2.08	0.08	8,152.02	1.66	0.29	8,279.42
Total (tons/construction project)	0.72	7.65	6.53	2.52	0.27	2.24	0.71	0.24	0.47	0.02	1,837.46	0.39	0.05	1,860.72

Notes:

Project Start Year ->	2025
Project Length (months) ->	24
Total Project Area (acres) ->	4
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	360	40
Grading/Excavation	64	0	340	0	880	40
Drainage/Utilities/Sub-Grade	0	12	0	30	760	40
Paving	0	18	0	30	600	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Segment 8 9 Interim Trail														
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**Total PM10 (tons/phase)**	**Exhaust PM10 (tons/phase)**	**Fugitive Dust PM10 (tons/phase)**	**Total PM2.5 (tons/phase)**	**Exhaust PM2.5 (tons/phase)**	**Fugitive Dust PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.05	0.58	0.46	0.28	0.02	0.26	0.07	0.02	0.05	0.00	126.12	0.03	0.00	115.53
Grading/Excavation	0.31	3.12	2.92	1.18	0.12	1.06	0.32	0.10	0.22	0.01	860.85	0.17	0.03	793.17
Drainage/Utilities/Sub-Grade	0.28	3.00	2.47	1.03	0.10	0.92	0.29	0.09	0.19	0.01	654.42	0.14	0.01	599.60
Paving	0.08	0.96	0.68	0.03	0.03	0.00	0.03	0.03	0.00	0.00	196.07	0.04	0.00	179.73
Maximum (tons/phase)	0.31	3.12	2.92	1.18	0.12	1.06	0.32	0.10	0.22	0.01	860.85	0.17	0.03	793.17
Total (tons/construction project)	0.72	7.65	6.53	2.52	0.27	2.24	0.71	0.24	0.47	0.02	1837.46	0.39	0.05	1,688.03

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Segment 8 9 Interim Trail	
Construction Start Year	2025	Enter a Year between 2014 and 2040 (inclusive)
Project Type	1	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	24.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the Ione formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	2.13	miles
Total Project Area	3.50	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00		64.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade	20.00	12.00	
	Paving	20.00	18.00	

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		2.40		1/1/2025
Grading/Excavation		9.60		3/15/2025
Drainage/Utilities/Sub-Grade		8.40		1/1/2026
Paving		3.60		9/14/2026
Totals (Months)	24			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation	85.00	30.00		4	340.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.43	0.11	0.05	0.02	1,660.70	0.00	0.26	1,738.54
Paving (grams/mile)	0.04	0.43	3.43	0.11	0.05	0.02	1,660.37	0.00	0.26	1,738.19
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.03	0.32	2.63	0.09	0.04	0.01	1,260.98	0.00	0.20	1,320.08
Tons per const. Period - Grading/Excavation	0.00	0.03	0.28	0.01	0.00	0.00	133.16	0.00	0.02	139.40
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.03	0.28	0.01	0.00	0.00	133.16	0.00	0.02	139.40

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		1	30.00
Miles/round trip: Paving		30.00		1	30.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.43	0.11	0.05	0.02	1,660.70	0.00	0.26	1,738.54
Paving (grams/mile)	0.04	0.43	3.43	0.11	0.05	0.02	1,660.37	0.00	0.26	1,738.19
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.03	0.24	0.01	0.00	0.00	109.84	0.00	0.02	114.98
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.02	0.00	0.00	0.00	10.15	0.00	0.00	10.62
Pounds per day - Paving	0.00	0.03	0.24	0.01	0.00	0.00	109.81	0.00	0.02	114.96
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	4.35	0.00	0.00	4.55
Total tons per construction project	0.00	0.00	0.03	0.00	0.00	0.00	14.50	0.00	0.00	15.18

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip		20	Calculated	Calculated
One-way trips/day		2	Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing		9	18	360.00
No. of employees: Grading/Excavation		22	44	880.00
No. of employees: Drainage/Utilities/Sub-Grade		19	38	760.00
No. of employees: Paving		15	30	600.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Grading/Excavation (grams/mile)	0.01	0.78	0.06	0.05	0.02	0.00	295.84	0.00	0.01	297.52
Draining/Utilities/Sub-Grade (grams/mile)	0.01	0.72	0.05	0.05	0.02	0.00	285.85	0.00	0.01	287.41
Paving (grams/mile)	0.01	0.72	0.05	0.05	0.02	0.00	285.72	0.00	0.01	287.28
Grubbing/Land Clearing (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Grading/Excavation (grams/trip)	0.93	2.56	0.25	0.00	0.00	0.00	63.73	0.06	0.03	73.77
Draining/Utilities/Sub-Grade (grams/trip)	0.87	2.47	0.23	0.00	0.00	0.00	61.59	0.06	0.03	71.10
Paving (grams/trip)	0.87	2.47	0.23	0.00	0.00	0.00	61.56	0.06	0.03	71.07
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.05	0.72	0.05	0.04	0.02	0.00	237.32	0.00	0.01	239.06
Tons per const. Period - Grubbing/Land Clearing	0.00	0.02	0.00	0.00	0.00	0.00	6.27	0.00	0.00	6.31
Pounds per day - Grading/Excavation	0.11	1.75	0.13	0.09	0.04	0.01	580.13	0.01	0.01	584.37
Tons per const. Period - Grading/Excavation	0.01	0.19	0.01	0.01	0.00	0.00	61.26	0.00	0.00	61.71
Pounds per day - Drainage/Utilities/Sub-Grade	0.09	1.42	0.10	0.08	0.03	0.00	484.10	0.01	0.01	487.51
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.13	0.01	0.01	0.00	0.00	44.73	0.00	0.00	45.05
Pounds per day - Paving	0.07	1.12	0.08	0.06	0.03	0.00	382.02	0.01	0.01	384.71
Tons per const. Period - Paving	0.00	0.04	0.00	0.00	0.00	0.00	15.13	0.00	0.00	15.23
Total tons per construction project	0.02	0.38	0.03	0.02	0.01	0.00	127.39	0.00	0.00	128.30

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust		1		5	5		8.00	40.00
Grading/Excavation - Exhaust		1		5	5		8.00	40.00
Drainage/Utilities/Subgrade		1		5	5		8.00	40.00
Paving		1		5	5		8.00	40.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Grading/Excavation (grams/mile)	0.04	0.43	3.46	0.12	0.05	0.02	1,682.27	0.00	0.26	1,761.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	0.43	3.43	0.11	0.05	0.02	1,660.70	0.00	0.26	1,738.54
Paving (grams/mile)	0.04	0.43	3.43	0.11	0.05	0.02	1,660.37	0.00	0.26	1,738.19
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.35	0.01	0.00	0.00	148.35	0.00	0.02	155.30
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.01	0.00	0.00	0.00	3.92	0.00	0.00	4.10
Pounds per day - Grading/Excavation	0.00	0.04	0.35	0.01	0.00	0.00	148.35	0.00	0.02	155.30
Tons per const. Period - Grading/Excavation	0.00	0.00	0.04	0.00	0.00	0.00	15.67	0.00	0.00	16.40
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.35	0.01	0.00	0.00	146.45	0.00	0.02	153.31
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.03	0.00	0.00	0.00	13.53	0.00	0.00	14.17
Pounds per day - Paving	0.00	0.04	0.35	0.01	0.00	0.00	146.42	0.00	0.02	153.28
Tons per const. Period - Paving	0.00	0.00	0.01	0.00	0.00	0.00	5.80	0.00	0.00	6.07
Total tons per construction project	0.00	0.01	0.09	0.00	0.00	0.00	38.91	0.00	0.01	40.74

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		1.00	10.00	0.26	2.08	0.05
Fugitive Dust - Grading/Excavation		1.00	10.00	1.06	2.08	0.22
Fugitive Dust - Drainage/Utilities/Subgrade		1.00	10.00	0.92	2.08	0.19

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.39	0.01	0.01	0.00	121.96	0.04
1.00			Model Default Tier	Air Compressors	0.17	1.81	1.15	0.05	0.05	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.22	2.73	1.70	0.07	0.07	0.00	444.50	0.02
1.00			Model Default Tier	Cranes	0.23	1.30	2.38	0.10	0.09	0.00	419.12	0.14
	1		Model Default Tier	Crawler Tractors	0.28	1.58	2.97	0.12	0.11	0.01	568.70	0.18
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Excavators	0.13	2.44	0.92	0.04	0.04	0.00	375.25	0.12
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.20	2.74	1.80	0.07	0.07	0.00	467.28	0.02
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.36	2.39	2.15	0.08	0.07	0.01	959.76	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Tractors/Loaders/Backhoes	0.30	5.02	3.00	0.12	0.11	0.01	679.63	0.22
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grubbing/Land Clearing	pounds per day	2.00	21.29	16.99	0.68	0.64	0.05	4,391.62	1.07
Grubbing/Land Clearing	tons per phase	0.05	0.56	0.45	0.02	0.02	0.00	115.94	0.03

Grading/Excavation	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.39	0.01	0.01	0.00	121.96	0.04
1.00			Model Default Tier	Air Compressors	0.17	1.81	1.15	0.05	0.05	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.22	2.73	1.70	0.07	0.07	0.00	444.50	0.02
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.28	1.58	2.97	0.12	0.11	0.01	568.70	0.18
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Excavators	0.13	2.44	0.92	0.04	0.04	0.00	375.25	0.12
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.20	2.74	1.80	0.07	0.07	0.00	467.28	0.02
	1		Model Default Tier	Graders	0.23	1.20	2.59	0.08	0.08	0.00	480.18	0.16
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.36	2.39	2.15	0.08	0.07	0.01	959.76	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.21	2.77	2.16	0.11	0.10	0.00	381.09	0.12
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rubber Tired Loaders	0.17	1.10	1.39	0.05	0.04	0.00	454.22	0.15
1.00	2		Model Default Tier	Scrapers	0.50	4.04	4.78	0.19	0.17	0.01	1,101.11	0.36
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.20	3.34	2.00	0.08	0.07	0.00	453.08	0.15
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	pounds per day	2.78	27.42	24.54	0.97	0.91	0.06	6,162.56	1.64
Grading/Excavation	tons per phase	0.29	2.90	2.59	0.10	0.10	0.01	650.77	0.17

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option Override of	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.39	0.01	0.01	0.00	121.96	0.04
	1		Model Default Tier	Air Compressors	0.17	1.81	1.15	0.05	0.05	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.04	0.23	0.28	0.01	0.01	0.00	37.89	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.22	2.73	1.70	0.07	0.07	0.00	444.50	0.02
1.00			Model Default Tier	Cranes	0.23	1.30	2.38	0.10	0.09	0.00	419.12	0.14
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.20	2.74	1.80	0.07	0.07	0.00	467.28	0.02
	1		Model Default Tier	Graders	0.23	1.20	2.59	0.08	0.08	0.00	480.18	0.16
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.36	2.39	2.15	0.08	0.07	0.01	959.76	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.13	2.17	1.19	0.06	0.05	0.00	341.25	0.11
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.03	0.16	0.19	0.01	0.01	0.00	25.86	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.21	2.79	1.82	0.08	0.08	0.00	467.28	0.02
1.00			Model Default Tier	Rollers	0.10	1.39	1.08	0.05	0.05	0.00	190.55	0.06
	1		Model Default Tier	Rough Terrain Forklifts	0.07	1.71	0.96	0.03	0.02	0.00	250.29	0.08
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Scrapers	0.50	4.04	4.78	0.19	0.17	0.01	1,101.11	0.36
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.30	5.02	3.00	0.12	0.11	0.01	679.63	0.22
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Drainage/Utilities/Sub-Grade	pounds per day		2.93	30.94	25.99	1.02	0.97	0.07	6,342.06	1.55
Drainage/Utilities/Sub-Grade	tons per phase		0.27	2.86	2.40	0.09	0.09	0.01	586.01	0.14

Paving	Default Number of Vehicles	Mitigation Option: Override of Default			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.03	0.82	0.39	0.01	0.01	0.00	121.96	0.04
1.00			Model Default Tier	Air Compressors	0.17	1.81	1.15	0.05	0.05	0.00	281.45	0.02
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.04	0.23	0.28	0.01	0.01	0.00	37.89	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.22	2.73	1.70	0.07	0.07	0.00	444.50	0.02
1.00			Model Default Tier	Cranes	0.23	1.30	2.38	0.10	0.09	0.00	419.12	0.14
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.20	2.74	1.80	0.07	0.07	0.00	467.28	0.02
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.36	2.39	2.15	0.08	0.07	0.01	959.76	0.31
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.13	2.17	1.19	0.06	0.05	0.00	341.25	0.11
	1		Model Default Tier	Paving Equipment	0.11	1.91	0.95	0.05	0.04	0.00	295.74	0.10
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rollers	0.10	1.39	1.08	0.05	0.05	0.00	190.55	0.06
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.30	5.02	3.00	0.12	0.11	0.01	679.63	0.22
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Paving	pounds per day	1.98	22.96	16.60	0.69	0.65	0.05	4,313.08	1.04
Paving	tons per phase	0.08	0.91	0.66	0.03	0.03	0.00	170.80	0.04
Total Emissions all Phases (tons per construction period) =>		0.70	7.23	6.10	0.24	0.23	0.02	1,523.51	0.39

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.46
0.00	0.00
0.00	0.00
0.00	445.98
0.00	423.64
0.01	574.83
0.00	0.00
0.00	379.30
0.00	0.00
0.00	468.76
0.00	0.00
0.00	0.00
0.01	970.09
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	686.93
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.04	4,429.63
0.00	116.94

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.46
0.00	0.00
0.00	0.00
0.00	445.98
0.00	0.00
0.01	574.83
0.00	0.00
0.00	379.30
0.00	0.00
0.00	468.76
0.00	485.35
0.00	0.00
0.01	970.09
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	385.20
0.00	0.00
0.00	0.00
0.00	459.12
0.01	1,112.98
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.00	457.96
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	6,219.66
0.01	656.80

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.46
0.00	0.00
0.00	38.08
0.00	445.98
0.00	423.64
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	468.76
0.00	485.35
0.00	0.00
0.01	970.09
0.00	0.00
0.00	0.00
0.00	0.00
0.00	344.92
0.00	0.00
0.00	25.99
0.00	0.00
0.00	468.80
0.00	192.60
0.00	252.99
0.00	0.00
0.00	0.00
0.01	1,112.98
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	686.93
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	6,397.20
0.01	591.10

N2O	CO2e
pounds/day	pounds/day
0.00	123.28
0.00	282.46
0.00	0.00
0.00	38.08
0.00	445.98
0.00	423.64
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	468.76
0.00	0.00
0.00	0.00
0.01	970.09
0.00	0.00
0.00	0.00
0.00	0.00
0.00	344.92
0.00	298.93
0.00	0.00
0.00	0.00
0.00	0.00
0.00	192.60
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	686.93
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.04	4,350.03
0.00	172.26
0.01	1,537.10

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	6.00	8
Air Compressors		78	6.00	8
Bore/Drill Rigs		221	6.00	8
Cement and Mortar Mixers		9	6.00	8
Concrete/Industrial Saws		81	6.00	8
Cranes		231	6.00	8
Crawler Tractors		212	6.00	8
Crushing/Proc. Equipment		85	6.00	8
Excavators		158	6.00	8
Forklifts		89	6.00	8
Generator Sets		84	6.00	8
Graders		187	6.00	8
Off-Highway Tractors		124	6.00	8
Off-Highway Trucks		402	6.00	8
Other Construction Equipment		172	6.00	8
Other General Industrial Equipment		88	6.00	8
Other Material Handling Equipment		168	6.00	8
Pavers		130	6.00	8
Paving Equipment		132	6.00	8
Plate Compactors		8	6.00	8
Pressure Washers		13	6.00	8
Pumps		84	6.00	8
Rollers		80	6.00	8
Rough Terrain Forklifts		100	6.00	8
Rubber Tired Dozers		247	6.00	8
Rubber Tired Loaders		203	6.00	8
Scrapers		367	6.00	8
Signal Boards		6	6.00	8
Skid Steer Loaders		65	6.00	8
Surfacing Equipment		263	6.00	8
Sweepers/Scrubbers		64	6.00	8
Tractors/Loaders/Backhoes		97	6.00	8
Trenchers		78	6.00	8
Welders		46	6.00	8

END OF DATA ENTRY SHEET

Road Construction Emissions Model, Version 9.0.0 - Interim Trail Part 2 (Interim Trail Removal and Rail Installation)

Daily Emission Estimates for -> Segment 8 9 Interim P2

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	1.96	21.66	8.81	10.22	0.22	10.00	2.27	0.19	2.08	0.05	5,323.43	0.17	0.06	5,346.08
Grading/Excavation	2.81	27.48	12.75	10.41	0.41	10.00	2.41	0.33	2.08	0.08	8,261.93	0.25	0.17	8,318.24
Drainage/Utilities/Sub-Grade	2.90	30.81	13.75	10.39	0.39	10.00	2.41	0.33	2.08	0.08	7,841.91	0.26	0.10	7,877.04
Paving	2.01	24.03	10.03	0.29	0.29	0.00	0.24	0.24	0.00	0.06	5,422.19	0.18	0.08	5,449.57
Maximum (pounds/day)	2.90	30.81	13.75	10.41	0.41	10.00	2.41	0.33	2.08	0.08	8,261.93	0.26	0.17	8,318.24
Total (tons/construction project)	1.39	14.54	6.49	4.68	0.19	4.49	1.09	0.16	0.93	0.04	3,904.62	0.12	0.06	3,926.37

Notes:

Project Start Year ->	2036
Project Length (months) ->	48
Total Project Area (acres) ->	4
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	360	40
Grading/Excavation	32	0	170	0	880	40
Drainage/Utilities/Sub-Grade	0	6	0	30	760	40
Paving	0	9	0	30	600	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Segment 8 9 Interim P2

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.10	1.14	0.47	0.54	0.01	0.53	0.12	0.01	0.11	0.00	281.08	0.01	0.00	256.08
Grading/Excavation	0.59	5.80	2.69	2.20	0.09	2.11	0.51	0.07	0.44	0.02	1,744.92	0.05	0.04	1,593.77
Drainage/Utilities/Sub-Grade	0.54	5.69	2.54	1.92	0.07	1.85	0.45	0.06	0.38	0.01	1,449.19	0.05	0.02	1,320.58
Paving	0.16	1.90	0.79	0.02	0.02	0.00	0.02	0.02	0.00	0.00	429.44	0.01	0.01	391.55
Maximum (tons/phase)	0.59	5.80	2.69	2.20	0.09	2.11	0.51	0.07	0.44	0.02	1744.92	0.05	0.04	1,593.77
Total (tons/construction project)	1.39	14.54	6.49	4.68	0.19	4.49	1.09	0.16	0.93	0.04	3904.62	0.12	0.06	3,561.98

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model
Data Entry Worksheet

Version 9.0.0

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	Segment 8 9 Interim P2	
Construction Start Year	2036	Enter a Year between 2014 and 2040 (inclusive)
Project Type	1	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	48.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	1	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	2.13	miles
Total Project Area	3.50	acres
Maximum Area Disturbed/Day	1.00	acre
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00		32.00
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade	20.00	6.00	
	Paving	20.00	9.00	

Mitigation Options

On-road Fleet Emissions Mitigation	No Mitigation	Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation	No Mitigation	Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/Businesses/CEQA-Land-Use-Planning/Mitigation). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		4.80		1/1/2036
Grading/Excavation		19.20		5/26/2036
Drainage/Utilities/Sub-Grade		16.80		12/31/2037
Paving		7.20		5/26/2039
Totals (Months)	48			

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation	85.00	30.00		2	170.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Grading/Excavation (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,457.65	0.00	0.23	1,525.96
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.29	0.11	0.05	0.01	1,429.41	0.00	0.22	1,496.40
Paving (grams/mile)	0.03	0.43	3.29	0.11	0.05	0.01	1,418.12	0.00	0.22	1,484.58
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.01	0.16	1.26	0.04	0.02	0.01	546.31	0.00	0.09	571.91
Tons per const. Period - Grading/Excavation	0.00	0.03	0.27	0.01	0.00	0.00	115.38	0.00	0.02	120.79
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.03	0.27	0.01	0.00	0.00	115.38	0.00	0.02	120.79

Note: Asphalt Hauling emission default values can be overridden in cells D91 through D94, and F91 through F94.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		1	30.00
Miles/round trip: Paving		30.00		1	30.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Grading/Excavation (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,457.65	0.00	0.23	1,525.96
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.29	0.11	0.05	0.01	1,429.41	0.00	0.22	1,496.40
Paving (grams/mile)	0.03	0.43	3.29	0.11	0.05	0.01	1,418.12	0.00	0.22	1,484.58
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.03	0.23	0.01	0.00	0.00	94.54	0.00	0.01	98.97
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.04	0.00	0.00	0.00	17.47	0.00	0.00	18.29
Pounds per day - Paving	0.00	0.03	0.23	0.01	0.00	0.00	93.79	0.00	0.01	98.19
Tons per const. Period - Paving	0.00	0.00	0.02	0.00	0.00	0.00	7.43	0.00	0.00	7.78
Total tons per construction project	0.00	0.01	0.06	0.00	0.00	0.00	24.90	0.00	0.00	26.07

Note: Worker commute default values can be overridden in cells D121 through D126.

Worker Commute Emissions	User Override of Worker			
User Input	Commute Default Values	Default Values		
Miles/ one-way trip		20	Calculated	Calculated
One-way trips/day		2	Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing		9	18	360.00
No. of employees: Grading/Excavation		22	44	880.00
No. of employees: Drainage/Utilities/Sub-Grade		19	38	760.00
No. of employees: Paving		15	30	600.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.00	0.48	0.02	0.05	0.02	0.00	226.88	0.00	0.00	227.90
Grading/Excavation (grams/mile)	0.00	0.48	0.02	0.05	0.02	0.00	225.19	0.00	0.00	226.20
Draining/Utilities/Sub-Grade (grams/mile)	0.00	0.46	0.02	0.05	0.02	0.00	221.32	0.00	0.00	222.30
Paving (grams/mile)	0.00	0.46	0.02	0.05	0.02	0.00	219.91	0.00	0.00	220.89
Grubbing/Land Clearing (grams/trip)	0.48	1.91	0.14	0.00	0.00	0.00	47.87	0.03	0.02	54.63
Grading/Excavation (grams/trip)	0.46	1.89	0.14	0.00	0.00	0.00	47.42	0.03	0.02	54.12
Draining/Utilities/Sub-Grade (grams/trip)	0.43	1.85	0.13	0.00	0.00	0.00	46.36	0.03	0.02	52.92
Paving (grams/trip)	0.41	1.83	0.13	0.00	0.00	0.00	45.96	0.03	0.02	52.47
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.02	0.46	0.02	0.04	0.01	0.00	181.97	0.00	0.00	183.04
Tons per const. Period - Grubbing/Land Clearing	0.00	0.02	0.00	0.00	0.00	0.00	9.61	0.00	0.00	9.66
Pounds per day - Grading/Excavation	0.05	1.11	0.05	0.09	0.04	0.00	441.49	0.00	0.01	444.10
Tons per const. Period - Grading/Excavation	0.01	0.23	0.01	0.02	0.01	0.00	93.24	0.00	0.00	93.79
Pounds per day - Drainage/Utilities/Sub-Grade	0.04	0.93	0.04	0.08	0.03	0.00	374.70	0.00	0.01	376.90
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.01	0.17	0.01	0.01	0.01	0.00	69.24	0.00	0.00	69.65
Pounds per day - Paving	0.03	0.73	0.03	0.06	0.02	0.00	293.93	0.00	0.01	295.66
Tons per const. Period - Paving	0.00	0.06	0.00	0.00	0.00	0.00	23.28	0.00	0.00	23.42
Total tons per construction project	0.02	0.49	0.02	0.04	0.02	0.00	195.38	0.00	0.00	196.53

Note: Water Truck default values can be overridden in cells D153 through D156, I153 through I156, and F153 through F156.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated	User Override of	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Round Trips/Vehicle/Day	Round Trips/Vehicle/Day	Trips/day	Miles/Round Trip	Miles/Round Trip	Daily VMT
Grubbing/Land Clearing - Exhaust		1		5	5		8.00	40.00
Grading/Excavation - Exhaust		1		5	5		8.00	40.00
Drainage/Utilities/Subgrade		1		5	5		8.00	40.00
Paving		1		5	5		8.00	40.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,468.71	0.00	0.23	1,537.54
Grading/Excavation (grams/mile)	0.03	0.43	3.31	0.11	0.05	0.01	1,457.65	0.00	0.23	1,525.96
Draining/Utilities/Sub-Grade (grams/mile)	0.03	0.43	3.29	0.11	0.05	0.01	1,429.41	0.00	0.22	1,496.40
Paving (grams/mile)	0.03	0.43	3.29	0.11	0.05	0.01	1,418.12	0.00	0.22	1,484.58
Grubbing/Land Clearing (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation (grams/trip)	0.00	0.00	4.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Draining/Utilities/Sub-Grade (grams/trip)	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving (grams/trip)	0.00	0.00	4.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.04	0.34	0.01	0.00	0.00	129.52	0.00	0.02	135.59
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.02	0.00	0.00	0.00	6.84	0.00	0.00	7.16
Pounds per day - Grading/Excavation	0.00	0.04	0.34	0.01	0.00	0.00	128.54	0.00	0.02	134.57
Tons per const. Period - Grading/Excavation	0.00	0.01	0.07	0.00	0.00	0.00	27.15	0.00	0.00	28.42
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.04	0.34	0.01	0.00	0.00	126.05	0.00	0.02	131.96
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.01	0.06	0.00	0.00	0.00	23.29	0.00	0.00	24.39
Pounds per day - Paving	0.00	0.04	0.34	0.01	0.00	0.00	125.06	0.00	0.02	130.92
Tons per const. Period - Paving	0.00	0.00	0.03	0.00	0.00	0.00	9.90	0.00	0.00	10.37
Total tons per construction project	0.00	0.02	0.18	0.01	0.00	0.00	67.19	0.00	0.01	70.33

Note: Fugitive dust default values can be overridden in cells D183 through D185.

Fugitive Dust	User Override of Max	Default	PM10	PM10	PM2.5	PM2.5
	Acreage Disturbed/Day	Maximum Acreage/Day	pounds/day	tons/per period	pounds/day	tons/per period
Fugitive Dust - Grubbing/Land Clearing		1.00	10.00	0.53	2.08	0.11
Fugitive Dust - Grading/Excavation		1.00	10.00	2.11	2.08	0.44
Fugitive Dust - Drainage/Utilities/Subgrade		1.00	10.00	1.85	2.08	0.38

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*				pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.04	0.86	0.38	0.00	0.00	0.00	146.81	0.00
1.00			Model Default Tier	Air Compressors	0.12	1.79	0.76	0.01	0.01	0.00	281.45	0.01
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.16	2.72	1.17	0.01	0.01	0.00	444.50	0.01
1.00			Model Default Tier	Cranes	0.18	1.01	0.41	0.01	0.01	0.01	503.58	0.02
	1		Model Default Tier	Crawler Tractors	0.28	1.43	0.84	0.03	0.03	0.01	685.28	0.02
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Excavators	0.16	2.67	0.29	0.01	0.01	0.00	451.34	0.01
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.13	2.72	1.20	0.01	0.01	0.00	467.28	0.01
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.42	2.23	0.70	0.03	0.03	0.01	1,148.35	0.04
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00			Model Default Tier	Tractors/Loaders/Backhoes	0.37	5.27	2.17	0.03	0.03	0.01	809.39	0.03
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Grubbing/Land Clearing	pounds per day		1.93	21.17	8.45	0.17	0.17	0.05	5,011.94	0.17
Grubbing/Land Clearing	tons per phase		0.10	1.12	0.45	0.01	0.01	0.00	264.63	0.01

Grading/Excavation	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.04	0.86	0.38	0.00	0.00	0.00	146.81	0.00
1.00			Model Default Tier	Air Compressors	0.12	1.79	0.76	0.01	0.01	0.00	281.45	0.01
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.16	2.72	1.17	0.01	0.01	0.00	444.50	0.01
	0		Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Crawler Tractors	0.28	1.43	0.84	0.03	0.03	0.01	685.28	0.02
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Excavators	0.16	2.67	0.29	0.01	0.01	0.00	451.34	0.01
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.13	2.72	1.20	0.01	0.01	0.00	467.28	0.01
	1		Model Default Tier	Graders	0.20	1.15	0.46	0.02	0.02	0.01	576.35	0.02
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.42	2.23	0.70	0.03	0.03	0.01	1,148.35	0.04
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.21	2.92	1.33	0.03	0.03	0.00	457.05	0.02
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Rubber Tired Loaders	0.18	1.09	0.42	0.01	0.01	0.01	549.37	0.02
1.00	2		Model Default Tier	Scrapers	0.53	2.62	1.57	0.06	0.06	0.01	1,324.25	0.05
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Tractors/Loaders/Backhoes	0.24	3.52	1.44	0.02	0.02	0.01	539.59	0.02
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00		N/A	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grading/Excavation	pounds per day	2.75	26.18	11.09	0.27	0.27	0.07	7,145.59	0.24
Grading/Excavation	tons per phase	0.58	5.53	2.34	0.06	0.06	0.02	1,509.15	0.05

Drainage/Utilities/Subgrade	Default Number of Vehicles	Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Mitigation Option Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.04	0.86	0.38	0.00	0.00	0.00	146.81	0.00
	1		Model Default Tier	Air Compressors	0.12	1.79	0.76	0.01	0.01	0.00	281.45	0.01
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.04	0.23	0.28	0.01	0.01	0.00	37.89	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.16	2.72	1.17	0.01	0.01	0.00	444.50	0.01
1.00			Model Default Tier	Cranes	0.18	1.01	0.41	0.01	0.01	0.01	503.58	0.02
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Generator Sets	0.13	2.72	1.20	0.01	0.01	0.00	467.28	0.01
	1		Model Default Tier	Graders	0.20	1.15	0.46	0.02	0.02	0.01	576.35	0.02
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.42	2.23	0.70	0.03	0.03	0.01	1,148.35	0.04
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Pavers	0.18	2.40	0.64	0.03	0.03	0.00	410.45	0.02
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Plate Compactors	0.03	0.16	0.19	0.01	0.01	0.00	25.86	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pumps	0.14	2.76	1.21	0.01	0.01	0.00	467.28	0.01
1.00			Model Default Tier	Rollers	0.10	1.46	0.66	0.01	0.01	0.00	228.53	0.01
	1		Model Default Tier	Rough Terrain Forklifts	0.14	1.97	0.81	0.01	0.01	0.00	300.69	0.01
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	2		Model Default Tier	Scrapers	0.53	2.62	1.57	0.06	0.06	0.01	1,324.25	0.05
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	5.27	2.17	0.03	0.03	0.01	809.39	0.03
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Drainage/Utilities/Sub-Grade	pounds per day	2.86	29.82	13.14	0.29	0.29	0.07	7,246.62	0.25
Drainage/Utilities/Sub-Grade	tons per phase	0.53	5.51	2.43	0.05	0.05	0.01	1,339.18	0.05

Paving	Default Number of Vehicles	Mitigation Option Override of Default			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Override of Default Number of Vehicles	*Program-estimate*	Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
1.00			Model Default Tier	Aerial Lifts	0.04	0.86	0.38	0.00	0.00	0.00	146.81	0.00
1.00			Model Default Tier	Air Compressors	0.12	1.79	0.76	0.01	0.01	0.00	281.45	0.01
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Cement and Mortar Mixers	0.04	0.23	0.28	0.01	0.01	0.00	37.89	0.00
1.00			Model Default Tier	Concrete/Industrial Saws	0.16	2.72	1.17	0.01	0.01	0.00	444.50	0.01
1.00			Model Default Tier	Cranes	0.18	1.01	0.41	0.01	0.01	0.01	503.58	0.02
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Generator Sets	0.13	2.72	1.20	0.01	0.01	0.00	467.28	0.01
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00			Model Default Tier	Off-Highway Trucks	0.42	2.23	0.70	0.03	0.03	0.01	1,148.35	0.04
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipm	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	1		Model Default Tier	Pavers	0.18	2.40	0.64	0.03	0.03	0.00	410.45	0.02
	1		Model Default Tier	Paving Equipment	0.15	2.08	0.52	0.03	0.03	0.00	357.22	0.01
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1.00	3		Model Default Tier	Rollers	0.10	1.46	0.66	0.01	0.01	0.00	228.53	0.01
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	5		Model Default Tier	Signal Boards	0.09	0.45	0.54	0.02	0.02	0.00	73.97	0.01
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3.00	2		Model Default Tier	Tractors/Loaders/Backhoes	0.37	5.27	2.17	0.03	0.03	0.01	809.39	0.03
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4
Paving	pounds per day		1.97	23.23	9.43	0.21	0.21	0.05	4,909.41	0.17
Paving	tons per phase		0.16	1.84	0.75	0.02	0.02	0.00	388.83	0.01
Total Emissions all Phases (tons per construction period) =>			1.37	14.00	5.96	0.14	0.14	0.04	3,501.78	0.12

N2O	CO2e
pounds/day	pounds/day
0.00	147.23
0.00	282.34
0.00	0.00
0.00	0.00
0.00	445.85
0.00	505.11
0.01	687.42
0.00	0.00
0.00	452.69
0.00	0.00
0.00	468.61
0.00	0.00
0.00	0.00
0.01	1,151.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	812.02
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.04	5,027.44
0.00	265.45

N2O	CO2e
pounds/day	pounds/day
0.00	147.23
0.00	282.34
0.00	0.00
0.00	0.00
0.00	445.85
0.00	0.00
0.01	687.42
0.00	0.00
0.00	452.69
0.00	0.00
0.00	468.61
0.00	578.08
0.00	0.00
0.01	1,151.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	458.54
0.00	0.00
0.00	0.00
0.00	551.01
0.01	1,328.39
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.00	541.35
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	7,167.67
0.01	1,513.81

N2O	CO2e
pounds/day	pounds/day
0.00	147.23
0.00	282.34
0.00	0.00
0.00	38.08
0.00	445.85
0.00	505.11
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	468.61
0.00	578.08
0.00	0.00
0.01	1,151.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	411.76
0.00	0.00
0.00	25.99
0.00	0.00
0.00	468.63
0.00	229.27
0.00	301.67
0.00	0.00
0.00	0.00
0.01	1,328.39
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	812.02
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00

0.05	7,269.21
0.01	1,343.35

N2O	CO2e
pounds/day	pounds/day
0.00	147.23
0.00	282.34
0.00	0.00
0.00	38.08
0.00	445.85
0.00	505.11
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	468.61
0.00	0.00
0.00	0.00
0.01	1,151.83
0.00	0.00
0.00	0.00
0.00	0.00
0.00	411.76
0.00	358.35
0.00	0.00
0.00	0.00
0.00	0.00
0.00	229.27
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	74.35
0.00	0.00
0.00	0.00
0.00	0.00
0.01	812.02
0.00	0.00
0.00	0.00

N2O	CO2e
pounds/day	pounds/day
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.00	0.00
0.04	4,924.80
0.00	390.04
0.03	3,512.65

Equipment default values for horsepower and hours/day can be overridden in cells D403 through D436 and F403 through F436.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63	6.00	8
Air Compressors		78	6.00	8
Bore/Drill Rigs		221	6.00	8
Cement and Mortar Mixers		9	6.00	8
Concrete/Industrial Saws		81	6.00	8
Cranes		231	6.00	8
Crawler Tractors		212	6.00	8
Crushing/Proc. Equipment		85	6.00	8
Excavators		158	6.00	8
Forklifts		89	6.00	8
Generator Sets		84	6.00	8
Graders		187	6.00	8
Off-Highway Tractors		124	6.00	8
Off-Highway Trucks		402	6.00	8
Other Construction Equipment		172	6.00	8
Other General Industrial Equipment		88	6.00	8
Other Material Handling Equipment		168	6.00	8
Pavers		130	6.00	8
Paving Equipment		132	6.00	8
Plate Compactors		8	6.00	8
Pressure Washers		13	6.00	8
Pumps		84	6.00	8
Rollers		80	6.00	8
Rough Terrain Forklifts		100	6.00	8
Rubber Tired Dozers		247	6.00	8
Rubber Tired Loaders		203	6.00	8
Scrapers		367	6.00	8
Signal Boards		6	6.00	8
Skid Steer Loaders		65	6.00	8
Surfacing Equipment		263	6.00	8
Sweepers/Scrubbers		64	6.00	8
Tractors/Loaders/Backhoes		97	6.00	8
Trenchers		78	6.00	8
Welders		46	6.00	8

END OF DATA ENTRY SHEET

Appendix E.

Biological Resources Information

- E.1, Sensitive Plant and Wildlife Species Conservation Status, Habitat Requirements, and Potential Occurrence
- E.2, USFWS IPaC Species List
- E.3, List of Plants Observed during Floristic Surveys
- E.4, Species Narratives for Sensitive Plant and Wildlife Species Known or With Potential to Occur
- E.5, Bird Species Observed by Habitat Type

This page intentionally left blank.

Appendix E.1a Sensitive plant species: conservation status, habitat types, and potential for occurrence in the vicinity of the proposed Santa Cruz Rail Trail Project Segments 8 and 9, Santa Cruz County, California.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Arenaria paludicola marsh sandwort	Endangered	Endangered	List 1B.1	Freshwater marshes	LAX*, SBD*, SCR*, SFO*, SLO, Washington*	May-August	**NONE.** Marsh sandwort has been reintroduced in several areas in Wilder Ranch State Park including Baldwin Creek. However, natural occurrences of this species are considered extirpated from Santa Cruz County and have never been observed in the vicinity of the study area.
Chorizanthe robusta var. hartwegii Scotts Valley spineflower	Endangered	None	List 1B.1	Meadows and seeps (sandy), valley and foothill grassland (mudstone, Purisima outcrops)	SCR	April-July	**NONE.** Known to occur in small populations in mesic, sandy soils in Scott's Valley and Felton. There is no potential to occur in the study area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Chorizanthe robusta var. *robusta* robust spineflower	Endangered	None	List 1B.1	Coastal dunes, coastal scrub, openings in cismontane woodland, in sandy or gravelly soil	ALA*, MNT, MRN, SCL*, SCR, SFO, SMT*	April-September	**UNLIKELY.** Grassland in the study area is limited to Twin Lakes State Beach north of Schwan Lagoon and does not support sandy or gravelly soils. This species has never been observed at this location despite surveys and monitoring for Santa Cruz tarplant by California State Parks biologists. Robust spineflower was not observed during 2022 floristic surveys of the study area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Holocarpha macradenia Santa Cruz tarplant	Threatened	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland, coastal scrub, often in clay or sandy soils	ALA*, CCA*, MNT, MRN*, SCR, SON*	June-October	**PRESENT (Adjacent).** A small, but persistent, extant population of Santa Cruz tarplant is located immediately south of the study area in Twin Lakes State Beach in degraded coastal prairie grassland north of Schwan Lagoon. This population fluctuates from zero to several hundred individuals depending on variable interannual climatic and habitat conditions. In 2022, 36 individual tarplant were identified in two discrete occurrences.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Leptosiphon grandifloris *Large-flowered leptosiphon*	None	None	List 4.2	Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland.	ALA, CCA, HUM, KRN, LAK, MEN, MER, MNO, MNT, MRN, SBA, SBT, SCL, SCR, SDG, SFO, SLO, SMT, SON, STA	April-August	**UNLIKELY**. Although widespread, large-flowered leptosiphon is typically found in sandy or rocky soils not occurring in the naturalized habitats associated with the study area. This species has not been documented within the Study Area but could occur in the coastal prairie grassland associated with Twin Lakes State Beach. This species was not observed during 2022 floristic surveys of the study area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Perideridia gairdneri ssp. *gairdneri* Gairdner's yampah	None	None	List 4.2	Moist sites in coastal prairie, broadleaved upland forest, chaparral, valley and foothill grassland, vernal pools	CCA, DNT, KRN, LAX*, MEN, MNT, MRN, NAP, ORA*, SBT, SCL, SCR, SDG*, SLO, SMT(*?), SOL, SON	June-October	**LOW.** Gairdner's yampah is typically located in semi-mesic grasslands and may be associated with disturbance similar to that which occurs at Twin Lakes State Beach. However, this species has never been documented as occurring at this location despite surveys and monitoring for Santa Cruz tarplant by California State Parks biologists. The nearest known extant occurrences are approximately 2.5 miles northwest of the Study Area in the UCSC West Marshall Field. This species was not observed during 2022 floristic surveys of the study area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Plagiobothrys diffusus San Francisco popcorn flower	None	Endangered	List 1B.1	Coastal prairie, valley and foothill grassland	ALA, SCR, SFO*, SMT	March-June	**UNLIKELY.** Grasslands in the study area associated with Twin Lakes State Beach are significantly disturbed and support invasive species including French broom, jubata grass, and annual grasses. The nearest extant occurrence is approximately 2 miles west of the study area in Moore Creek Preserve. This species was not observed during 2022 floristic surveys of the study area.
Polygonum hickmanii Scotts Valley polygonum	Endangered	Endangered	List 1B.1	Valley and foothill grassland; sandstone	SCR	May-August	**NONE.** This sandstone specific species is known only from two small populations in Scotts Valley in sandstone substrate. There is no potential to occur in the study area.

Species Common Name[1]	USFWS Listing[2]	State Status[3]	CNPS Status[4]	Habitat Type[5]	Distribution by County[6]	Flowering Period[7]	Potential for Occurrence
Trifolium buckwestiorum Santa Cruz clover	None	None	List 1B.1	Coastal prairie; margins of broadleaved upland forest, cismontane woodland	MEN, MNT, SCL, SCR, SMT, SON	April-October	**UNLIKLEY.** Santa Cruz clover typically occurs in relatively in-tact coastal prairie grasslands dominated by *Stipa* species and other native forbs not occurring the disturbed grasslands of Twin Lakes State Beach. This species has never been documented as occurring at this location despite numerous surveys and monitoring for Santa Cruz tarplant by California State Parks biologists. The nearest known extant occurrence is approximately 2 miles northwest of the study area in Pogonip Park. This species was not observed during 2022 floristic surveys of the study area.

[1]Nomenclature follows Hickman (1993); Tibor (2001); California Native Plant Society (2022).
[2]U.S. Fish and Wildlife Service (2019a, b, c).
[3]Section 1904, California Fish and Game Code (California Department of Fish and Game 2022a).
[4]Tibor (2001); California Native Plant Society (2022).
CNPS Lists: List 1A: Presumed extinct in California. List 1B: Rare, Threatened, or Endangered in California and elsewhere. List 2: Rare, Threatened, or Endangered in California, more common elsewhere. List 3: Plants about which more information is needed. List 4: Plants of limited distribution: a watch list.
Threat Code extensions: .1: Seriously endangered in California. .2: Fairly endangered in California. .3 Not very endangered in California.
[5]Thomas (1960); Munz and Keck (1973); Hickman (1993); Baldwin et al (2012); Tibor (2001); California Native Plant Society (2022); and unpublished information.
[6]Tibor (2001); California Native Plant Society (2021); and unpublished information; counties abbreviated by a three-letter code (below); occurrence in other states as indicated.
[7]Munz and Keck (1973); Tibor (2001); California Native Plant Society (2022)

* Presumed extinct in these counties or states.
? Uncertainty about distribution or identity

ALA: Alameda
AMA: Amador
BUT: Butte
CCA: Contra Costa
COL: Colusa
DNT: Del Norte
FRE: Fresno
GLE: Glenn
HUM: Humboldt
KRN: Kern
LAK: Lake
LAX: Los Angeles
MAD: Madera
MEN: Mendocino
MER: Merced
MNT: Monterey
MOD: Modoc
MPA: Mariposa
MRN: Marin
NAP: Napa
NEV: Nevada
ORA: Orange
PLA: Placer
PLU: Plumas
RIV: Riverside
SAC: Sacramento
SBA: Santa Barbara
SBD: San Bernardino
SBT: San Benito
SCL: Santa Clara
SCR: Santa Cruz
SCZ: Santa Cruz Island (SBA Co.)
SDG: San Diego
SFO: San Francisco
SHA: Shasta
SIE: Sierra
SIS: Siskiyou
SJQ: San Joaquin
SLO: San Luis Obispo
SMT: San Mateo
SOL: Solano
SON: Sonoma
SRO: Santa Rosa Island (SBA Co.)
STA: Stanislaus
SUT: Sutter
TEH: Tehama
TRI: Trinity
TUL: Tulare
TUO: Tuolumne
VEN: Ventura
YOL: Yolo
YUB: Yuba

Appendix E.1b Sensitive wildlife species: conservation status, habitat requirements, and potential for occurrence in the vicinity of the proposed Santa Cruz Rail Trail Project Segments 8 and 9, Santa Cruz County, California.

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
Invertebrates					
monarch butterfly *Danaus plexippus* (overwintering population)	FC	-	E-IUCN S2S3 L	The wintering monarch butterfly occupies a narrow band of habitat close to (the majority are within 1.5 miles of) the ocean. Eucalyptus groves (*Eucalyptus globulus*) and conifer groves are commonly utilized as overwintering sites in California. Abiotic and biotic factors including southeast aspect, wind protection and proximity to nectaries will determine habitat suitability (Dayton and Bell 1992).	**Present** Known from Woods Creek (McGinty and Davilla 2022) which crosses the project corridor, Twin Lakes State Beach open space (Lifeguard Headquarters) (Xerces Site 3011), as well as from Branciforte Avenue and Buena Vista Avenue (Xerces Site 3005) (Xerces Society 2022b). Potential habitat in eucalyptus groves along the corridor.
Ohlone Tiger Beetle *Cicindela ohlone*	FE	-	S1	Coastal terrace prairie and open grassland with barren areas for burrow construction (USFWS 2001).	**Not Expected** Known from Woods Creek (McGinty and Davilla 2022) which Nearest recorded occurrences are over 1.7 miles from the project area north of Highway 1 (CDFW 2022f,g). Although marginal, potential habitat is present in Twin Lakes State Beach open space, this species typically occurs on the second marine terrace.
Fish					
tidewater goby *Eucyclogobius newberryi*	FE	SSC	S3 AFS-E	Coastal lagoons and creeks; found up to 3 miles upstream in slow-moving water (USFWS 2005).	**Possible** Tidewater goby were documented in the San Lorenzo River in 2004 (occurrence there is considered "intermittent") (USFWS 2005). This feature is not considered critical habitat (USFWS 2013). Goby are also known from Schwann Lagoon in the Twin Lakes State Beach open space (CDFW 2022f,g).
central California coast coho salmon *Oncorhynchus kisutch*	FE	SE	S2? AFS-E	Spawns in loose silt-free coarse gravel; requires sufficient fall stream flow for spawning (NOAA Fisheries 2012b).	**Present** Present in the San Lorenzo River. The river and its riparian habitat are considered critical (NOAA Fisheries 1999, 2012a, 2016c, CalFish 2012).
central California coast steelhead *Oncorhynchus mykiss irideus*	FT	-	S2S3 AFS-TH	Requires silt-free gravel for spawning; spends the first few years of its life in fresh water before migrating to the ocean. Adults later return to breed in the same freshwater locations where they were spawned (CalFish 2011, NOAA Fisheries 2005).	**Present** Present in the San Lorenzo River, which is considered critical habitat (NOAA Fisheries 2016c; CalFish 2011).
Pacific lamprey *Entosphenus tridentatus*	-	SSC	S3	Perennial creeks and rivers with ocean access and gravel present for spawning (Alley 2022).	**Present** Known to occur in the San Lorenzo River (Alley 2022).
Amphibians and Reptiles					
California red-legged frog (CRLF) *Rana draytonii*	FT	SSC	S2S3	Requires the presence of surface water until mid to late summer for reproduction; occupies ephemeral and/or perennial water with standing or slow-moving flows. Upland habitat includes leaf litter, dense grassland, small mammal burrows, irrigated agricultural fields, and greenhouses. Adults are known to travel up to 2 miles overland between aquatic sites (Fellers and Kleeman 2007, USFWS 2010).	**Not Expected** The project corridor lacks suitable aquatic habitat for this species. The closest records are from the west side of Santa Cruz, approximately 2 miles west southwest of the western terminus of the corridor (CDFW 2022F,G).

Segments 8 and 9

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
foothill yellow-legged frog (FYLF) *Rana boylii*	-	SE	S3	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats; needs at least some cobble-sized substrate for egg-laying (CDFW 2022f,g).	**Not Expected** The corridor lacks suitable habitat for this species. The closest records are from Soquel Creek approximately 2 miles northeast of the eastern terminus of the corridor (CDFW 2022f,g).
California giant salamander *Dicamptodon ensatus*	-	SSC	S2S3	Wet coastal forests near cool streams and seeps. Aquatic larvae are found in streams and occasionally lakes and ponds (Stebbins and McGinnis 2012, Nafis 2022).	**Not Expected** The corridor lacks the wet forests this species occupies. Nearest record is from Arana Gulch near Paul Sweet Road, 2 miles north of the corridor (CDFW 2022f,g).
Santa Cruz black salamander *Aneides niger*	-	SSC	S3	Mixed deciduous woodland, coniferous forests, and coastal grasslands. Found under rocks near streams, in talus, under damp logs, and other objects. In Santa Cruz, found near water under rocks near streams, seeps, and springs (Stebbins and McGinnis 2012, CDFW 2014, 2016, Nafis 2022).	**Possible** May occur along the creeks/drainages adjacent to the corridor. Known from Pogonip Park and UCSC quarry approximately 2.8 miles and 3.0 miles (respectively) northwest of the western terminus of the alignment (CDFW 2022f,g).
Santa Cruz long-toed salamander *Ambystoma macrodactylum croceum*	FE	SE/FP	S1S2	Shallow ponds with emergent and submerged vegetation for cover during the aquatic phase of their life. In terrestrial phase, require woodlands with a dense understory and abundant burrows (Ruth 1988, USFWS 1999a).	**Not Expected** Closest known occurrence is 5.5 miles south of the project corridor at Valencia Lagoon (CDFW 2022f,g).
California Tiger Salamander *Ambystoma californiense pop. 1*	FT	ST	S3	Lives underground for most of the year in vacant small mammal burrows in grassland, savannah, and open woodland habitats. Required vernal pools or other seasonal water sources for breeding (CDFW 2022f,g).	**Not Expected** Recorded occurrences at Ellicot Pond and Buena Vista Pond are over 9 miles south from the southern terminus of the corridor (CDFW 2022f,g).
western pond turtle (WPT) *Emys marmorata*	-	SSC	S3	Found in ponds, marshes, rivers, streams, and irrigation ditches containing aquatic vegetation; usually seen sunning on logs, banks, or rocks. Moves up to 3-4 miles within a creek system, especially during "walk-abouts" before a female lays eggs; nests up to several hundred feet from aquatic habitat, in woodlands, grasslands, or open forest (Holland and Bury 1998).	**Possible** Known to occur in Neary Lagoon adjacent to the western terminus of the corridor and from Schwan Lagoon within Twin Lakes State Beach open space (CDFW 2022f,g).
San Francisco Gartersnake *Thamnophis sirtalis tetrataenia*	FE	SE	S2	Habitat consists of freshwater/brackish marsh, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County; Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important (CDFW 2022f,g).	**Not Expected** Closest known occurrence is near Ano Nuevo State Park (CDFW 2022f,g). No known records of the species near the corridor.
Birds (Nesting and/or Wintering)					
nesting birds of prey (various species)	MBTA	CFGC 3503.5	-	Variety of woodland and savanna habitats.	**Present** Red-tailed hawk observed near the mouth of the San Lorenzo River being harassed by Peregrine Falcons. Red-shouldered hawk, Cooper's hawk, sharp-shinned Hawk frequently observed near the corridor. Nesting records for various birds of prey occur at Twin Lakes open space (ebird 2022).
native nesting birds/rookeries	MBTA	CFGC 3503		Various habitats.	**Present** Nesting activities (courtship, nest building, incubation through fledging) have been observed and are expected along the corridor. Great blue heron, great egret, and double-crested cormorant rookeries present in eucalyptus grove on the east size of the San Lorenzo River train trestle. Frequent nesting activity by native nesting birds observed at Schwan Lake.

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
golden eagle *Aquila chrysaetos*		FP	S3	Resident in open mountains, foothills, canyons, or plains near open spaces for hunting. Nests in a mass of sticks on cliffs or in trees (Kochert et al. 2002).	**Not Expected** Ebird documents only two occurrences in the vicinity of the corridor (ebird 2022) at Arana Gulch open space (2018) and Twin Lakes State Beach open space (2014).
bald eagle *Haliaeetus leucocephalus* (nesting and wintering)	BCC	SE/FP	S3	Occupies forested areas next to large bodies of water with diverse, abundant, and vulnerable prey base. Nests are typically in mature or old growth trees with edge habitat and within 2 kilometers of the water. Roosts in large trees with an open and accessible canopy (Buehler 2020).	**Present** Adult eagle/s were observed along the San Lorenzo River, are known from the Santa Cruz Yacht Harbor, and Arana Gulch open space (ebird 2022). Adults and juveniles were observed within the Twin Lakes State Beach open space where eagles are known to nest (ebird 2022).
northern harrier *Circus cyaneus* (nesting)	-	SSC	S3	Ground nester; grasslands, sloughs, wet meadows, savanna, prairies and marshes (Brekenridge 1935, Simmons 1988, Smith et al. 2011).	**Possible** Ebird documents this species at Neary Lagoon and occasional rare occurrences (including 2022) at the Twin Lakes State Beach open space (ebird 2022). Nearly Lagoon, Arana Gulch and Twin Lakes State Beach open space provide suitable nesting and foraging habitat.
white-tailed kite *Elanus leucurus*	-	FP	S3S4	Nests in trees on the margins of open areas including grasslands and sloughs containing a high abundance of small mammals and lizards (Dunk 1995).	**Possible** Tree stands within and adjacent to the corridor provide potential nesting habitat. Uncommon ebird (2022) sightings near the corridor.
American peregrine falcon *Falco peregrinus anatum*	BCC	FP	S3S4	Inhabits open wetlands near cliffs, also occurs in some cities where nests on buildings and bridges (White et al. 2002).	**Present** Ebird (2022) documents sightings along the corridor, including recurrent 2022 sightings near the mouth of the San Lorenzo River during breeding season, as well at Tyrell Park, and within the Twin Lakes State Beach open space.
western snowy plover *Charadrius nivosus nivosus* (nesting)	FT, BCC	SSC	S2S3	Coastal beaches and open sandy coastal areas, sparsely vegetated dues, salt pans at lagoons and salt-evaporation ponds, estuaries, levees, and some sand/cobble river bars up to 7 miles from the beach (Page et al. 2009; USFWS 1999b).	**Not Expected** The corridor lacks suitable habitat. Recent sightings on Main Beach, Seabright Beach, and in the open space at Twin Lakes State Beach (ebird 2022).
California least tern *Sternula antillarum browni* (nesting colony)	FE	SE/FP	S2	Forms colonies near a lagoon, estuary, river, or on the coast; on bare or sparsely vegetated sand, dried mudflats, shell islands, gravel or sand pits, or sometimes on stones; more recently, occasionally in human-influenced environments such as agricultural fields, airports, and flat, graveled rooftops (Thompson et al. 2020).	**Not Expected** Rare observations of individuals in Santa Cruz County. Historical colonies on the Pajaro River. Closest current colonies are from southernmost San Francisco Bay approximately 31 miles north of the corridor (CDFW 2022f,g, ebird 2022).
marbled murrelet *Brachyramphus marmoratus* (nesting)	FT	SE	S2	Nests in coastal mature and old growth coniferous forests that have large limbs or platforms; moss, thick needle layer, or other nesting substrate; and multilayered canopies (Nelson 2020).	**Not Expected** The corridor lacks the mature coniferous forest this species utilizes for breeding. The closest known occurrence of (likely) breeding are from 2001 in Fall Creek (Henry Cowell State Park) (9.3 miles north northwest) and from 1999 on Big Creek (13.3 miles northwest). Recent eBird reports from Main Beach, Seabright Beach, and Twin Lakes State Beach, but no recorded breeding (ebird 2022).

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
long-eared owl *Asio otus* (nesting)	-	SSC	S3?	Utilizes abandoned stick nests of other large birds or squirrel nests in a variety of wooded areas, including orchards and usually near aquatic and open areas for foraging; forages mostly on rodents (Marks et al. 1994).	**Not Expected** Ebird March 2013 records document a rare owl at the Twin Lakes State Beach open space (ebird 2022). Not known to nest in Santa Cruz County (Suddjian 2013).
burrowing owl *Athene cunicularia* (nesting/wintering)	BCC	SSC	S3	Found in open areas with low-growing vegetation including annual and perennial grasslands, deserts, open scrub habitats, and agricultural fields with suitable burrows. Burrows of fossorial mammals are an essential component of their nesting and wintering habitat, but they may also use artificial structures such as culverts, openings in asphalt pavement, woody debris/rock piles, and crevices in stacks of straw bales (Poulin et al. 2011).	**Not Expected** Closest wintering records are from the meadows at UCSC. Breeding activities are extirpated from Santa Cruz County (CBD et al. 2003; Townsend and Lenihan 2007; Trulio 2018); the most recent breeding record is from 1987 at UCSC (CBD et al. 2003; Santa Cruz Bird Club 2013). Limited sightings throughout Santa Cruz County. Most recent (2019) at Seabright Beach (eBird 2022).
Least Bell's vireo *Vireo bellii pusillus* (nesting)	FE/BCC	SE	S1S2	Uses shrubs and small trees (dense, low shrubby vegetation characteristic of early successional stages in riparian areas, brushy fields, scrub oak woodland, and coastal chaparral) for habitat and nest building (Kus 2020).	**Not Expected** Extirpated from its historical distribution in the vicinity. This subspecies currently breeds from Ventura County south. Rare northernmost nesting pairs are from Gilroy in Santa Clara County from 1997 (Kus 2002) and the San Joaquin River in Stanislaus County from 2009 (Kus 2020). Only rare observations of individuals on the Pajaro River (1996) (ebird 2022).
Vaux's swift *Chaetura vauxi* (nesting)	-	SSC	S2S3	Nests in large tree hollows in forested environments. Nest made of conifer needles or small twigs are glued together with salvia and attached to inside wall of hallow tree usually near the bottom. Post breeding flocks up to several hundred may roost together in chimney like tree hollows. Also known to use manmade chimneys (Bull and Collins 2007).	**Possible** Uncommon breeding season observations near the corridor along the San Lorenzo River, at Arana Gulch, and the Twin Lakes State Beach open space (ebird 2022). Nesting records are from chimneys on the west side of Santa Cruz (Suddjian 2013).
black swift *Cypseloides niger* (nesting)	BCC	SSC	S2	Nests sites include seacliff crevices along coastal areas and behind inland waterfalls in mountain regions. Feeds primarily on flying insects (Lowther and Collins 2002).	**Not Expected** One recent (2021) sighting at the mouth of the San Lorenzo River but no recent nesting records in town (ebird 2022). Closest recent nesting records are from the north coast of Santa Cruz between Wilder Ranch and Davenport. The mudstones cliffs along the San Lorenzo are not suitably moist for breeding (Rinkert 2022).
olive-sided flycatcher *Contopus cooperi* (nesting)	BCC	SSC	-	Inhabits woodland and forest habitats. Nests in tall trees, generally near the edges and openings to meadows, grasslands, wetlands, and ponds (Altman and Sallabanks 2012).	**Present** Known from Woods Creek, the upper Santa Cruz Harbor, Arana Gulch, and the Twin Lakes State Beach open space near the corridor (ebird 2022).
Southwestern willow flycatcher *Empidonax traillii extimus* (nesting)	FE/BCC	SE	-	Willow riparian forest for nesting and foraging (Vickery 1996).	**Not Expected** Occurs as a seasonal migrant at Pilkington Creek, Arana Gulch, and the Twin Lakes State Beach open space near the corridor (ebird 2022). No breeding records in Santa Cruz County.

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
loggerhead shrike *Lanius ludovicianus* (nesting)	BCC	SSC	-	Grassland, agricultural fields, and shrub habitats with small reptiles and insects. Nests in dense trees or shrubs adjacent to open areas. Known to impale prey items on barbed wire fences (Yosef 1996).	**Not Expected** Uncommon observations along the San Lorenzo River outside of breeding season (eBird 2022). No recent breeding records in Santa Cruz County.
bank swallow *Riparia riparia* (nesting)	-	ST	-	Nests in erodible soils on vertical or near-vertical banks and bluffs of rivers and streams. Also found in sand and gravel quarries (Garrison 1999).	**Not Expected** Considered extirpated as a breeding species in Santa Cruz County. Closest known breeding colony is from Ano Nuevo (Rinkert 2018).
oak titmouse *Baeolophus inornatus* (nesting)	BCC	-	-	Nests in tree stands with natural cavities and old woodpecker holes, artificial nest boxes from mid-March through April. Inhabits oak woodlands along the Pacific Slope. Requires elevated perches for foraging and eating (Cicero 2000, Cicero et al. 2017).	**Present** Known to occur and nest along the corridor at Pilkington Creek, in the Seabright neighborhood, and in the Twin Lakes State Beach open space north and south of the railway corridor (ebird 2022).
yellow-breasted chat *Icteria virens* (nesting)	-	SSC	S3	Dense riparian vegetation 1-8 ft. above the ground, with a well-developed understory (Eckerle and Thompson 2001).	**Not Expected** Not expected to breed on the coast. Only rare records from the vicinity of the corridor are documented (ebird 2022).
yellow warbler *Setophaga petechia* (nesting)	BCC	SSC	S3S4	Nests in deciduous riparian woodland with open canopy along streams or other watercourses; forages in dense understory of riparian woodland (Lowther et al. 1999).	**Not Expected** Occurs as a seasonal migrant, such as at Twin Lakes State Beach open space (ebird 2022). No recent nesting records in Santa Cruz County (Suddjian 2013).
grasshopper sparrow *Ammodramus savannarum* (nesting)	-	SSC	S3	Associated with short to medium-height grasslands with little or no shrub cover. May be found in pastures and agricultural fields. Feeds on insects and seeds. Nest on ground in grassland habitats between April and May (Vickery 1996, Biosearch 2008).	**Not Expected** No recent records in the vicinity of the corridor (ebird 2022). Closest recent potential breeding records are from UCSC (ebird 2022).
tricolored blackbird *Agelaius tricolor*	BCC	ST	S1S2	Colonial breeders. Breeding sites require nearby water, suitable nesting substrate, and open-range foraging habitat of natural grassland, shrubland, or agricultural cropland (Meese and Beedy 2015, Beedy et al. 2017).	**Not Expected** Fall migrants observed along the San Lorenzo River, Pilkington Creek, and at Twin Lakes State Beach open space (ebird 2022) No confirmed breeding in Santa Cruz County since 2008 (Meese 2017).
Lawrence's goldfinch *Spinus lawrencei* (nesting)	BCC		S3S4	Typically occupies arid and open woodlands within the near vicinity of three habitat components: chaparral or other brushy areas; tall annual weed fields; and water source such as stream, small lake, or farm pond (Watt et al. 2016).	**Not Expected** An uncommon breeder on the coast. **E**bird (2022) records near the corridor are rare and during fall migration.
Yellow-billed Cuckoo *Coccyzus americanus*	FT	SE	S1	Prefer wooded habitats with dense cover and water nearby. Typical habitat includes woodlands with low, scrubby, vegetation, overgrown orchards, abandoned farmland, and dense thickets along streams and marshes. Nests in willows along streams and forages in nearby cottonwoods (Hughes 2020).	**Not Expected** The western subspecies has disappeared from most of the western U.S. and now occurs as a rare breeder in California. Rare sightings in the county occur at Natural Bridges State Beach (2009) and in Soquel (2011) north of Highway 1, each approximately 2 miles from the corridor (ebird 2022). Not within designated critical habitat for the species (USFWS 2021).
Mammals					
roosting bat species		CFGC		Variable	**Present** Individual old growth trees providing suitable habitat for roosting bats such as at Pilkington Creek crossing.

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
Townsend's big-eared bat *Corynorhinus [Plecotus] townsendii*	-	SSC	HP S2	Roost sites are highly associated w/ caves and mines; buildings must offer "cave-like" features; known to roost in large tree hollows and under bridges (WBWG 2017).	**Not Expected** The corridor lacks preferred roosting features. Nearest recent roost records are from a burnt (hollowed out) redwood tree at UCSC (Heady 2018).
pallid bat *Antrozous pallidus*	-	SSC	HP S3	Roost sites are primarily associated with oak, redwood, ponderosa pine, and giant Sequoia forests. Will also roost under bridges and in buildings and rock outcrops (WBWG 2017).	**Not Expected** Although mature trees adjacent to the project site may provide suitable habitat, the closest record for the species is from Soquel Creek (CDFW 2022e,f).
western red bat *Lasiurus blossevillii*	-	SSC	HP S3	Roosts in foliage primarily in riparian and wooded habitats (WBWG 2017, Harvey et al.1999, Pierson et al. 1997).	**Present** Tree canopies provide potential roosting habitat. Nearest detection record is from east branch of Moore Creek at Meder Street crossing (Heady 2018).
fringed myotis *Myotis thysanodes*	-	-	HP S3	Roosts sites in California are primarily in buildings or mines; will also roost in large conifer snags and in caves (O' Farrell and Studier 1980, WBWG 2017).	**Not Expected** The project site lacks preferred roost features for this species. Known from Felton (CDFW 2018c,d).
long-legged myotis *Myotis Volans*	-	-	HP S3	Roosts primarily in large hollow tree snags, or live trees with exfoliating bark; also uses rock crevices, mines, and buildings (Warner and Czaplewski 1984).	**Possible** Mature trees adjacent to the project site provide potential habitat. Occurs on Moore Creek Preserve (Heady 2018).
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	-	SC	S2S3	Associated with riparian, oak woodland and redwood forest habitats and edge habitats. Builds houses from sticks and leaves under or in buildings and trees, in hollow trees, or in tree canopy (Sakai and Noon 1993).	**Present** The open spaces adjacent to the corridor provide potential habitat for the woodrat. Several stick houses observed along the corridor at Twin Lakes State Beach open.
American badger *Taxidea taxus*	-	SSC	-	Occurs in open, uncultivated grasslands and meadows, and open stages of shrub and forest habitats with dry with friable soils. Forages on burrowing rodents, insects, and ground nesting birds (Quinn 2015).	**Not Expected** The fragmented open spaces adjacent to the corridor are isolated from the larger contiguous open spaces this shy species utilizes. Nearest record is from UCSC campus lands approximately 1.8 miles northwest of corridor CDFW 2022f,g).
southern sea otter *Enhydra lutris nereis*	FT/ MMPA	FP	S2	Inhabits nearshore coastal waters, bays, harbors, and estuaries along the central California coast, and are often associated with rocky substrate. Most remain inshore of the outer kelp edge, and foraging activity is generally restricted to water depths of 25 meters or less (Tinker et al. 2017).	**Present** Known to occur intermittently in the Santa Cruz Harbor (McGinty 2022).
eastern Pacific harbor seal *Phoca vitulina richardsi = richardii*	MMPA	-	-	Occurs in nearshore coastal California waters, rivers, bays, harbors and estuaries. Hauls out on rock outcroppings, beaches, mudflats and docks that have easy access to water and minimal human disturbance (Seal Conservancy 2017; Vanderhoof and Allen 2005; Lowry and Forney 2005).	**Present** Residential within the Santa Cruz Harbor, where it forages and uses the docks as nighttime haul-outs. Molts within the harbor from approximately mid-May-early July (McGinty 2022; Seal Conservancy 2017; Vanderhoof and Allen 2005; Lowry and Forney 2005). Closest rookeries are Elkhorn Slough, Lover's Point State Marine Reserve, and Point Lobos (25-50 km southeast and south).

Common Name *Scientific Name*	Status Federal/State/Other			Habitat Requirements	Potential to Occur in Project Site
California sea lion *Zalophus californianus*	MMPA	-	-	California sea lions are observed in pelagic and nearshore coastal waters. They haul-out and breed on sites with nearby food supply and easy access to water where human disturbance is minimal, such as offshore rock outcroppings, beaches, jetties, docks, and buoys. This species is often observed in rivers, bays, and harbors (Wheeler 2001; Keith et al. 1984).	**Present** Residential within the Monterey Bay and intermittent within the Santa Cruz Harbor, where it uses the docks as occasional hauls outs and forages during fish runs, when anchovies and sardines get caught in the harbor by currents (McGinty 2022). Most of their breeding sites are in the southern California Channel Islands, where their pups are born every summer. A few pups have been born on Ano Nuevo Island and the Farallon Islands. California sea lion annual migration brings the males north to the Santa Cruz area each year (Wheeler 2001; Keith et al. 1984).

NOTES:

Federal Status

FE = Endangered: Any species, which is in danger of extinction throughout all, or a significant portion of its range (USFWS 2022a).

FT = Threatened: Any species, which is likely to become an endangered species within the foreseeable future throughout all, or a significant portion of its range (USFWS 2022b).

FC = Candidate: Candidate for listed under the ESA (USFWS 2022c).

MMPA = Marine Mammal Protection Act

BCC = Species of migratory nongame birds that are considered to be of concern in the United States because of (1) documented or apparent population declines, (2) small or restricted populations, (3) dependence on restricted or vulnerable habitats (USFWS 2008).

State Status

SE Endangered: A native species or subspecies of animal which is in serious danger of becoming extinct throughout all, or a significant portion of its range, due to loss of habitat, change in habitat, over exploitation, predation, competition and/or disease (CDFW 2021a).

ST Threatened: A native species or subspecies of bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Fish & G. Code, §2067 (CDFW 2021b).

SSC = CDFW Species of Special Concern: Designated because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (CDFW 2021b, CDFW CNDDB 2021).

FP = Fully Protected[1]: State's initial protection for animals that were rare or faced possible extinction. Fully Protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

CFGC = California Fish and Game Code:
3503 - Protects active nests and eggs of birds from take, possession, or needless destruction
3503.5 - Protects birds of prey (Orders Falcinoformes and Strigiformes)
Section 86; 2000; 2014; 3007; 4150, and Title 14 CCR - Protects non-listed bat species and their roosting habitat, including individual roosts and maternity colonies.

Other (CDFW CNDDB 2021)

NatureServe Ranking[2]: S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state.
S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

[1] More information on Fully Protected species and the take provisions can be found in the Fish and Game Code, (birds at §3511, mammals at §4700, reptiles and amphibians at §5050, and fish at §5515). Additional information on Fully Protected fish can be found in the California Code of Regulations, Title 14, Division 1, Subdivision 1, Chapter 2, Article 4, §5.93.

[2] Originally developed by The Nature Conservancy and now maintained and recently revised by NatureServe. Includes a **Global rank** (G-rank), over the taxon's entire distribution, and a **State rank** (S-rank), over its state distribution. For subspecies and varieties, there is also a "T" rank describing the global rank for the infraspecific taxon. Criteria are used to assign element ranks, from G1 to G5 for the Global rank and from S1 to S5 for the State rank, taking into account rarity, threats, and trends (CDFW CNDDB 2022).

Segments 8 and 9

AFS = American Fisheries Society; E = Endangered; T = Threatened
E-IUCN= Endangered - International Union for Conservation of Nature (IUCN) (2022).
L = Locally unique and protected by City and County ordinances
HP = Considered “High Priority” on the Western Bat Working Group’s (WBWG) Western Bat Species Regional Priority Matrix (2017)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
Phone: (805) 644-1766 Fax: (805) 644-3958
Email Address: FW8VenturaSection7@FWS.Gov
https://www.fws.gov/Ventura

In Reply Refer To: August 04, 2022
Project Code: 2022-0071116
Project Name: Segments 8/9 Rail Trail

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed list identifies species listed as threatened and endangered, species proposed for listing as threatened or endangered, designated and proposed critical habitat, and species that are candidates for listing that may occur within the boundary of the area you have indicated using the U.S. Fish and Wildlife Service's (Service) Information Planning and Conservation System (IPaC). The species list fulfills the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the species list should be verified after 90 days. We recommend that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists following the same process you used to receive the enclosed list. Please include the Consultation Tracking Number in the header of this letter with any correspondence about the species list.

Due to staff shortages and excessive workload, we are unable to provide an official list more specific to your area. Numerous other sources of information are available for you to narrow the list to the habitats and conditions of the site in which you are interested. For example, we recommend conducting a biological site assessment or surveys for plants and animals that could help refine the list.

If a Federal agency is involved in the project, that agency has the responsibility to review its proposed activities and determine whether any listed species may be affected. If the project is a major construction project*, the Federal agency has the responsibility to prepare a biological assessment to make a determination of the effects of the action on the listed species or critical habitat. If the Federal agency determines that a listed species or critical habitat is likely to be adversely affected, it should request, in writing through our office, formal consultation pursuant to section 7 of the Act. Informal consultation may be used to exchange information and resolve

conflicts with respect to threatened or endangered species or their critical habitat prior to a written request for formal consultation. During this review process, the Federal agency may engage in planning efforts but may not make any irreversible commitment of resources. Such a commitment could constitute a violation of section 7(d) of the Act.

Federal agencies are required to confer with the Service, pursuant to section 7(a)(4) of the Act, when an agency action is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat (50 CFR 402.10(a)). A request for formal conference must be in writing and should include the same information that would be provided for a request for formal consultation. Conferences can also include discussions between the Service and the Federal agency to identify and resolve potential conflicts between an action and proposed species or proposed critical habitat early in the decision-making process. The Service recommends ways to minimize or avoid adverse effects of the action. These recommendations are advisory because the jeopardy prohibition of section 7(a)(2) of the Act does not apply until the species is listed or the proposed critical habitat is designated. The conference process fulfills the need to inform Federal agencies of possible steps that an agency might take at an early stage to adjust its actions to avoid jeopardizing a proposed species.

When a proposed species or proposed critical habitat may be affected by an action, the lead Federal agency may elect to enter into formal conference with the Service even if the action is not likely to jeopardize or result in the destruction or adverse modification of proposed critical habitat. If the proposed species is listed or the proposed critical habitat is designated after completion of the conference, the Federal agency may ask the Service, in writing, to confirm the conference as a formal consultation. If the Service reviews the proposed action and finds that no significant changes in the action as planned or in the information used during the conference have occurred, the Service will confirm the conference as a formal consultation on the project and no further section 7 consultation will be necessary. Use of the formal conference process in this manner can prevent delays in the event the proposed species is listed or the proposed critical habitat is designated during project development or implementation.

Candidate species are those species presently under review by the Service for consideration for Federal listing. Candidate species should be considered in the planning process because they may become listed or proposed for listing prior to project completion. Preparation of a biological assessment, as described in section 7(c) of the Act, is not required for candidate species. If early evaluation of your project indicates that it is likely to affect a candidate species, you may wish to request technical assistance from this office.

Only listed species receive protection under the Act. However, sensitive species should be considered in the planning process in the event they become listed or proposed for listing prior to project completion. We recommend that you review information in the California Department of Fish and Wildlife's Natural Diversity Data Base. You can contact the California Department of Fish and Wildlife at (916) 324-3812 for information on other sensitive species that may occur in this area.

[*A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

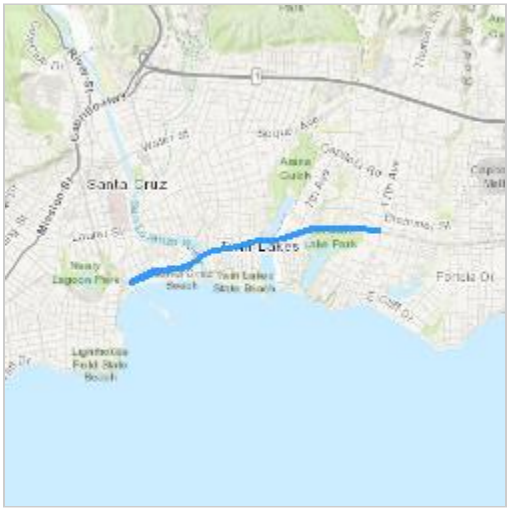
This species list is provided by:

Ventura Fish And Wildlife Office
2493 Portola Road, Suite B
Ventura, CA 93003-7726
(805) 644-1766

Project Summary

Project Code: 2022-0071116
Project Name: Segments 8/9 Rail Trail
Project Type: Recreation - New Construction
Project Description: Construct a pedestrian/bike path trail along the railway line from the Santa Cruz Beach Boardwalk in the City of Santa Cruz to 17th Avenue in unincorporated Santa Cruz County.
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.96622835,-122.01218316602632,14z



Counties: Santa Cruz County, California

Endangered Species Act Species

There is a total of 17 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Least Bell's Vireo *Vireo bellii pusillus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5945	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Southwestern Willow Flycatcher *Empidonax traillii extimus* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened
Foothill Yellow-legged Frog *Rana boylii* Population: Central Coast Distinct Population Segment (Central Coast DPS) No critical habitat has been designated for this species.	Proposed Threatened

Fishes

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Ohlone Tiger Beetle *Cicindela ohlone* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8271	Endangered

Flowering Plants

NAME	STATUS
Marsh Sandwort *Arenaria paludicola*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2229	
Santa Cruz Tarplant *Holocarpha macradenia*	Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6832	
Scotts Valley Polygonum *Polygonum hickmanii*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3222	
Scotts Valley Spineflower *Chorizanthe robusta var. hartwegii*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7108	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: EcoSystems West Consulting Group
Name: Erin McGinty
Address: 180 7th Aveune, Suite 201
City: Santa Cruz
State: CA
Zip: 95062
Email emcginty@sbcglobal.net
Phone: 8314296730

Appendix E.3. List of Plants Observed during 2022 floristic surveys of the Santa Cruz Rail Trail Segments 8 and 9 Study Area, Santa Cruz County, California.

Species Name	Common Name	Status	Life History
ANACARDIACEAE			
Toxicodendron diversilobum	Poison oak	native	Vine, Shrub
APIACEAE			
Daucus carota	Carrot	non-native	Perennial herb
Foeniculum vulgare	Fennel	invasive non-native	Perennial herb
APOCYNACEAE			
Nerium oleander	Oleander	non-native	Tree
ARACEAE			
Lemna sp.	Duckweed	native	Perennial herb
ARALIACEAE			
Hedera canariensis	Canary ivy	invasive non-native	Vine
Hedera helix	English ivy	invasive non-native	Vine, Shrub
ASTERACEAE			
Baccharis pilularis	Coyote brush	native	Shrub
Centaurea melitensis	Tocalote	invasive non-native	Annual herb
Crepis capillaris	Smooth hawksbeard	non-native	Annual, Perennial herb
Delairea odorata	Cape ivy	invasive non-native	Perennial herb
Erigeron canadensis	Canada horseweed	native	Annual herb
Helminthotheca echioides	Bristly ox-tongue	non-native	Annual, Perennial herb
Holocarpha macradenia	Santa Cruz tarplant	• rare native	Annual herb
Hypochaeris radicata	Hairy cat's ear	invasive non-native	Perennial herb
Lactuca serriola	Prickly lettuce	non-native	Annual herb
Madia sativa	Coastal tarweed	native	Annual herb
Sonchus oleraceus	Sow thistle	non-native	Annual herb
BORAGINACEAE			
Echium candicans	Pride of madeira	non-native	Shrub
BRASSICACEAE			
Brassica nigra	Black mustard	invasive non-native	Annual herb

Species Name	Common Name	Status	Life History
Nasturtium officinale	Watercress	native	Perennial herb (aquatic)
Raphanus sativus	Wild radish	non-native	Annual, Biennial herb
CAPRIFOLIACEAE			
Lonicera hispidula	Pink honeysuckle	native	Vine, Shrub
CARYOPHYLLACEAE			
Polycarpon tetraphyllum var. *tetraphyllum*	Four leaved all-seed	non-native	Annual herb
CONVOLVULACEAE			
Convolvulus arvensis	Field bindweed	non-native	Perennial herb, Vine
Ipomoea purpurea	Common morning glory	non-native	Annual herb
CUPRESSACEAE			
Hesperocyparis macrocarpa	Monterey cypress	native	Tree
Sequoia sempervirens	Coast redwood	native	Tree
CYPERACEAE			
Cyperus eragrostis	Tall flatsedge	native	Perennial grasslike herb
Schoenoplectus californicus	California bulrush	native	Perennial grasslike herb
Scirpus microcarpus	Small fruited bulrush	native	Perennial grasslike herb
DENNSTAEDTIACEAE			
Pteridium aquilinum var. *pubescens*	Western bracken fern	native	Fern
DIPSACACEAE			
Scabiosa atropurpurea	Pincushions	non-native	Annual herb
DRYOPTERIDACEAE			
Dryopteris arguta	Wood fern	native	Fern
ERICACEAE			
Arbutus menziesii	Madrone	native	Tree
FABACEAE			
Acacia dealbata	Silver wattle	invasive non-native	Tree, Shrub
Acacia decurrens	Green wattle	non-native	Tree
Acacia melanoxylon	Blackwood acacia	non-native	Tree
Genista monspessulana	French broom	invasive non-native	Shrub

Species Name	Common Name	Status	Life History
Robinia pseudoacacia	Black locust	non-native	Tree
Trifolium incarnatum	Crimson clover	non-native	Annual herb
FAGACEAE			
Quercus agrifolia	Coast live oak	native	Tree
GROSSULARIACEAE			
Ribes sanguineum var. *glutinosum*	Flowering currant	native	Shrub
JUGLANDACEAE			
Juglans regia	English walnut	non-native	Tree
JUNCACEAE			
Juncus effusus ssp. *pacificus*	Pacific rush	native	Perennial grasslike herb
Juncus mexicanus	Mexican rush	native	Perennial grasslike herb
LAMIACEAE			
Salvia leucantha	Mexican bush sage	non-native	Perennial herb
MALVACEAE			
Malva parviflora	Cheeseweed	non-native	Annual herb
MYRTACEAE			
Eucalyptus camaldulensis	Red gum	non-native	Tree
Eucalyptus globulus	Blue gum	non-native	Tree
OLEACEAE			
Ligustrum lucidum	Glossy privet	non-native	Tree, Shrub
PINACEAE			
Pinus radiata	Monterey pine	native	Tree
PLANTAGINACEAE			
Plantago lanceolata	English plantain	non-native	Perennial herb
POACEAE			
Arundo donax	Giant reed	invasive non-native	Perennial grass
Avena barbata	Slender wild oat	invasive non-native	Annual grass
Briza maxima	Rattlesnake grass	non-native	Annual grass
Bromus catharticus var. *catharticus*	Rescue grass	non-native	Annual, Perennial grass
Bromus diandrus	Ripgut brome	invasive non-native	Annual grass
Bromus hordeaceus	Soft chess	non-native	Annual grass

Species Name	Common Name	Status	Life History
Bromus sitchensis var. *carinatus*	California brome	native	Perennial grass
Cortaderia jubata	Jubata grass	invasive non-native	Perennial grass
Cynodon dactylon	Bermuda grass	invasive non-native	Perennial grass
Echinochloa crus-galli	Barnyard grass	non-native	Annual grass
Ehrharta erecta	Veldt grass	invasive non-native	Perennial grass
Festuca myuros	Six-weeks fescue	invasive non-native	Annual grass
Festuca perennis	Italian ryegrass	invasive non-native	Annual, Perennial grass
Holcus lanatus	Common velvetgrass	invasive non-native	Perennial grass
Hordeum murinum ssp. *leporinum*	Farmer's foxtail	non-native	Annual grass
Paspalum dilatatum	Dallis grass	non-native	Perennial grass
Pennisetum clandestinum	Kikuyu grass	non-native	Perennial grass
Phalaris aquatica	Harding grass	invasive non-native	Perennial grass
Phleum pratense	Common timothy	non-native	Perennial grass
Phyllostachys aurea	Golden bamboo	non-native	Vine
Phyllostachys bambusoides	Japanese timber bamboo	non-native	Shrub
Polypogon monspeliensis	Rabbitfoot grass	non-native	Annual grass
Stipa pulchra	Purple needlegrass	native	Perennial grass
POLYGONACEAE			
Eriogonum latifolium	Coast buckwheat	native	Perennial herb
Rumex crispus	Curly dock	non-native	Perennial herb
RHAMNACEAE			
Frangula californica	California coffeeberry	native	Shrub
ROSACEAE			
Cotoneaster pannosus	Woolly cotoneaster	invasive non-native	Shrub
Heteromeles arbutifolia	Toyon	native	Shrub
Rosa californica	California wild rose	native	Shrub
Rubus armeniacus	Himalayan blackberry	invasive non-native	Shrub
SALICACEAE			

Species Name	Common Name	Status	Life History
Salix lasiolepis	Arroyo willow	native	Tree, Shrub
SAPINDACEAE			
Acer macrophyllum	Bigleaf maple	native	Tree
Aesculus californica	Buckeye	native	Tree
SCROPHULARIACEAE			
Myoporum laetum	Ngaio tree	invasive non-native	Tree, Shrub
TROPAEOLACEAE			
Tropaeolum majus	Common nasturtium	non-native	Annual herb, Vine
VALERIANACEAE			
Centranthus ruber	Jupiter's beard	non-native	Annual, Perennial herb

Appendix E.4 Species Narratives for Sensitive Plant and Wildlife Species Known or With Potential to Occur in or Near the Santa Cruz Rail Trail Segments 8 and 9, Santa Cruz County, California.

Santa Cruz Tarplant

Santa Cruz tarplant (*Holocarpha macradenia*) is listed as a Federal Threatened (FE), State Endangered (SE), and CNPS List 1B.1 rare plant species with limited extant populations occurring on flat to gently sloping marine terraces. Santa Cruz tarplant is an herbaceous annual in the Asteraceae (composite) family with a blooming period from June to October. Flowering individuals are usually most recognizable July through August when individuals are mature with multiple branching flowerheads and competing annual grasses and forbs have senesced. This species is known to occur primarily in Santa Cruz County and northern Monterey County with several disjunct occurrences in western Contra Costa County. In 2002, USFWS designated 2,902 acres of Critical Habitat for the species with emphasis on coastal terrace prairie with suitable soil types including Watsonville, Tierra, Elkhorn, Santa Inez, and Pinto Series. Commonly associated native plants include purple needlegrass (*Stipa pulchra*), California oatgrass (*Danthonia californica*), tarweed (*Hemizonia* spp.), rushes (*Juncus* spp.), golden brodiaea (*Tritilea ixioides*), and blue-eyed grass (*Sisyrinchium bellum*). In general, Santa Cruz tarplant requires regular disturbance or compacted soils with reduced competition from annual, invasive grasses for germination and persistence in the landscape. Grazing, mowing, and/or burning are effective methods for maintaining stable Santa Cruz tarplant populations.

Monarch Butterfly (overwintering population)

The life history of the monarch butterfly can be divided into two temporally defined periods: a spring/summer reproductive period and a fall/winter non-reproductive (wintering) period. During the spring and summer, monarchs exploit the widely distributed North American milkweed flora (*Asclepias* spp.) as food for their larvae. In the fall, the adult butterflies that are produced during the latter part of summer migrate to wintering habitats in coastal California or central Mexico to spend the winter months. Monarchs spend from 1 to 9 months as adults, depending on when they become reproductive. If they become reproductive immediately, they live 1-2 months as adults. Monarch adults that emerge from August through October typically migrate and overwinter before becoming reproductive the following spring. These monarchs live approximately 8-9 months as adults.

Monarchs arrive at overwintering sites in September and the first half of October to form fall aggregations. By mid-November they form more stable aggregations, which persist through January or February (Pelton et al. 2016). The monarch butterfly utilizes eucalyptus, Monterey pine, or Monterey cypress tree groves for winter roost sites, typically within 1.5 miles (2.4 kilometers) of the Pacific Ocean. Monarchs form aggregations on the underside of peripheral branches. The suitability of the stand is determined by both abiotic and biotic factors including:

- periodic exposure to (dappled) sunlight (often southeast aspect);
- cool shady roost areas for periods of warm weather;
- primary and secondary wind protection;
- proximity to nectaries (fall or winter blooming flowers);
- humidity; and
- water sources.

Monarchs typically emerge from a state of nocturnal torpor and begin to fly at temperatures around 55° F. Below this temperature, monarchs are unable to fly and are often killed or injured if dislodged from their roosts. Winter roost sites are sufficiently heterogeneous to permit shifts of roost location in accord with prevailing weather conditions and seasonal variation in insulation. The roost site consists of the trees upon which the butterflies cluster, as well as the surrounding trees that provide wind protection. In addition, overwintering habitat includes nectar plants and water sources surrounding the roost site, since monarchs may fly some distance to obtain these resources (Pelton et al. 2016, Griffiths and Villablanca 2015).

Tidewater Goby

The tidewater goby is a small fish that inhabits coastal brackish water habitats entirely within California, ranging from the Smith River in Del Norte County south to Agua Hedionda Lagoon in San Diego County. The tidewater goby is uniquely adapted to coastal lagoons and the uppermost brackish zone of larger estuaries. The goby is typically found in water less than 1 meter (3.3 feet) deep and salinities of less than 12 parts per thousand. During spring floods that scour the lagoons and breach the sandbar barriers, the tidewater goby utilizes muddy backwater habitats. The goby may migrate upstream from the estuaries a distance of 0.5 miles to 3.5 miles. Upstream locations may be used for reproduction which occurs year-round with peaks in April-May, after the lagoons close, and in summer (USFWS 2005).

Coho Salmon

The central California coast coho salmon (*Oncorhynchus kisutch*) is an anadromous fish, migrating between its natal fresh water stream and the ocean. The coho salmon egg hatches in gravels of the stream where its parents spawned. The coho remains in this environment for a little over a year before beginning its downstream migration to estuarine and marine environments. The adult ocean phase lasts two to three years before the coho returns to its natal stream, to spawn and die (NOAA Fisheries 2012b).

Essential habitat features include cool, clean water without barriers to passage, loose gravels free of sediment for spawning and egg development, adequate pools with instream cover such as vegetation, large rocks, or undercut banks, and off-channel pools or other areas protected from winter storm flows. The coho salmon historically existed from central California to Point Hope, Alaska, through the Aleutian Islands, inhabiting most coastal streams (NOAA Fisheries 2012).

Steelhead

The central California coast steelhead (*Oncorhynchus mykiss*) is an anadromous fish that migrates between its natal stream and the ocean. The steelhead egg hatches in gravels of the stream where its parents spawned. The steelhead remains in this stream environment for a up to a few years before beginning its downstream migration to estuarine and marine environments. The adult ocean phase lasts one to three years before the steelhead returns to the stream where it was born, to spawn. The steelhead is iteroparous, meaning an adult may not die after spawning but instead returns to the ocean and repeats the adult portion of its lifecycle one or more times (NOAA Fisheries 2005, 2016a).

Essential habitat features include cool, clean water without barriers to passage, loose gravels free of sediment for spawning and egg development, adequate pools with instream cover such as vegetation, large rocks, or undercut banks, and off-channel pools or other areas protected from winter storm flows. Coastal estuaries, or lagoons are also essential to smolts, as a transitional habitat between freshwater and marine environments that provides highly productive feeding opportunities and brackish water for acclimation to saltwater. The range of the central California coast steelhead is from the Russian River to Aptos Creek, including the San Francisco Bay tributaries, in coastal streams that lack natural passage barriers (NOAA Fisheries 2005, 2016a).

Pacific Lamprey

Pacific lamprey spawns in habitat similar to that of salmon- gravel-bottomed streams at the upstream end of riffle habitat, typically between March and July. Larvae (ammocoetes) occupy areas of low velocity with fine substrates where they burrow, grow, and live as filter feeders for 3 to 7 years and feed primarily on diatoms and algae. Metamorphosis to the juvenile phase typically occurs over several months from summer through fall. At this stage the juveniles leave the burrow substrate and enter the water column. From there, juveniles migrate to the ocean where they mature into adults (CDFW 2022f,g).

Santa Cruz Black Salamander

The Santa Cruz black salamander (*Aneides flavipunctatus niger*) occurs in Santa Cruz County and San Mateo County; this population is disjunct from the northern California population *A. f. flavipunctatus*. The Santa Cruz black salamander can be found near streams, seeps, and springs, under damp logs, rocks, and other objects in mixed deciduous woodland, coniferous forests, and coastal grasslands (Stebbins and McGinnis 2012, CWHR 2014, CWHR 2016, Nafis 2022).

Western Pond Turtle

The western pond turtle (*Emys marmorata*) occurs in ponds, lakes, lagoons, rivers, and streams, optimally 3 – 6 feet deep, with basking sites and underwater cover. Western pond turtles are known to move overland, most often less than 600 feet, with greater movements along aquatic corridors in riverine environments. Females leave aquatic sites to lay their eggs in shallow excavated nests in grasslands and other open vegetation up to approximately 1,200 feet away from the water. Turtles may also move from ponds to escape adverse conditions or to bask (Feldman 1982, Holland and Bury 1998).

Bald Eagle

The Bald Eagle is a large bird of prey typically observed in the winter throughout most of California at lakes, reservoirs, rivers, rangelands, and coastal wetlands. They are opportunistic foragers preying upon a variety of small animals, with a preference for fish over other types. The species often scavenges, pirating food from other species, and catching its own only as a last resort. Breeding habitats throughout the state are primarily mountain and foothill forests and woodlands adjacent to water bodies. Breeding pairs remain together for life, or until the death of one individual at which time the surviving bird may seek a new mate. Large stick nests frequently built in the upper canopy of the tallest trees in the area. Breeding adults will reuse previous nests, repairing and expanding previous nests each year, or build new ones. The pair's territory typically includes several nests. Migratory bald eagles arrive in California during the fall and early winter before the breeding season which occurs from January through July or August. One to three eggs are laid in the winter or early spring, and chicks fledge when they are about 11 or 12 weeks old. Soon after leaving the nest, many young birds will migrate north (Buehler 2020).

Northern Harrier

The northern harrier (*Circus hudsonius*) hunts over open wetlands, marshes, grasslands, pastures, and active and fallow agriculture fields. Its diet consists of rodents and other small to medium-sized mammals, birds, insects, reptiles, frogs and carrion (Smith et al.2011). Males advertise territory occupancy and court females by performing an aerial sky-dancing display, consisting of a sequence of deep, u-shaped undulations, sometimes accompanied by chattering vocalizations. The display often ends with the male disappearing into a potential nest site (Breckenridge 1935, Simmons 1988, Smith et al.2011). Breeding occurs from April to September. The harrier nests in treeless habitats, building a loose nest composed of grasses, forbs, weeds, and wetland plants, on the ground or in thick vegetation near the ground in a well-concealed location, often near creeks or stock ponds. Females brood, raise and defend the young without the males. However, male and female northern harriers will roost communally (on the ground) during the non-breeding season (Smith et al. 2011).

White-tailed Kite

The white-tailed kite (*Elanus leucurus*) inhabits agricultural fields, open grasslands, savannah-like habitats, and riparian and oak woodlands in a relatively narrow band on the west coast of the U.S. and Canada and over large parts of Mexico. An abundance of prey is a requisite habitat feature. The white-tailed kite feeds on rodents, lizards, birds, and insects. Nests sites are variable, and may be located in herbaceous open stages of most habitats from large scrub to trees. The kite makes a stick nest near the top of its nest site, camouflaged from below but open on

top. Some nest site fidelity has been observed. Kites may nest semi-colonially. Breeding season occurs from late February to early August. Occasionally kites will double brood in a single season (Dunk 1995).

Peregrine Falcon

Habitat for the American peregrine falcon (*Falco peregrinus anatum*) is variable. Most commonly occupied habitats contain cliffs open to the air for nesting and open landscapes for foraging. The peregrine is now known to use towers and buildings in urban environments for nesting. Typically the peregrine falcon breeds February through July with replacement clutches only after nest failure. The peregrine predominantly captures its prey, mainly birds, in the air, but may also feed on mammals and pirated foods from other raptors (White et al. 2002).

Vaux's swift

The Vaux's swift (*Chaetura vauxi*) nests in large tree hollows in forested environments. The bird's nest is made of conifer needles or small twigs glued together with salvia and attached to inside wall of a hallow tree, usually near the bottom. Post breeding flocks of up to several hundred may roost together in chimney like tree hollows. The Vaux's swift is also known to use manmade chimneys. Known for its quick and agile flight, it rarely perches except when nesting or roosting and even is expected to mate on the wing. Vaux's is almost entirely insectivorous (Bull and Collins 2007).

Olive-sided flycatcher

The olive-sided flycatcher (*Contopus cooperi*) breeds in woodlands and forests, at edges and openings, such as meadows, grasslands, wetlands and ponds, near open water from Alaska through Canada into California. This bird builds a cup nest of twigs, rootlets, and lichens, placed near the tip on a horizontal branch of a tree. Tall, prominent trees and snags are used for perching, singing and from foraging. The olive-sided flycatcher winters primarily in Panama and the Andes Mountains of South America (Altman and Sallabanks 2012).

Oak Titmouse

The oak titmouse (*Baeolophus inornatus*) is a common year-round resident of warm, dry woodlands, restricted almost entirely to California, but ranging from southwest Oregon to northwest Baja California. The oak titmouse occupies predominantly oak or mixed oak-pine forests but has also adapted to other similar habitats such as open pine forests in central California. This bird species has a varied diet that is composed of plant parts including seeds and berries, as well as invertebrates. The oak titmouse pair bonds during the first breeding season, and the pair mates for life. Breeding occurs between March and July. The oak titmouse is a solitary nester that defends its territory year-round. The breeding pair builds a nest of grass, moss, mud, hair, feathers, and fur in a woodpecker hole, natural cavity, or nest box and may partially excavate their own cavities. In central California, breeding activity typically occurs between late February and the end of June; late nest-building (June) indicates a replacement nest or a second clutch (Cicero 2000, Cicero et al. 2017).

Bat Species

The western red bat roosts in foliage, primarily in riparian and wooded habitats, along streams and in edge habitats or habitat mosaics that provide open areas for foraging. The western red bat prefers roost sites that are protected from above and open below and located above dark ground cover (Harvey et al. 1999, Pierson et al. 1997). Young are born between late May and July and volant 3-6 weeks later. The western red bat begins foraging 1 - 2 hours after sunset and again several hours before sunrise, corresponding to periods of insect activity. This species may migrate a short distance between summer and winter ranges (WBWG 2017).

The long-legged myotis roosts primarily in large hollow tree snags, or live trees with exfoliating bark; but also uses rock crevices, mines, and buildings. This species is most common in woodland and forest habitats but also occupies chaparral and coastal scrub. The long-legged myotis forages in and around the forest canopy, over water and open habitats and is associated with short-lived patches of high insect density. The long-legged myotis forms maternity

colonies with young born in June and July and volant 3-6 weeks later. The long-legged myotis is most active 3-4 hours after sunset. This species probably makes short migrations to winter hibernacula (Warner and Czaplewski 1984).

San Francisco Dusky-footed Woodrat

The San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) is associated with riparian, oak woodland, redwood forest, and chaparral or other scrub habitats. The woodrat builds houses on the ground or in trees, utilizing understory, woody debris, human debris, structures or buildings. Houses range in size from 3 to 8 feet across at the base, up to 6 feet tall, and up to approximately 30 feet above the ground in tree canopies. The woodrat tends to live in colonies of 3 to 15 or more houses, with the inhabitants often representing multiple generations. Houses have food caches, latrines, and often *Peromyscus* sp. nests and/or amphibians within. The woodrat is mostly nocturnal, leaving its house to forage on different parts of the same woody plant seasonally including leaves, bark, seeds and fruit of coast live oak, coffeeberry, poison oak, elderberry, but also grasses, flowers, and fungi. The woodrat breeds from December to September with a peak in mid-spring (Sakai and Noon 1993).

Southern Sea Otter

Southern sea otter, otherwise known as California sea otters, are known to occur nearshore throughout central California coast. Otters live and feed in rocky and sandy areas along both the exposed outer coast and in protected areas such as bays, estuaries, and harbors. The otter is a keystone species, and plays a vital role in the food web and ecosystem function of kelp forests and seagrass beds. Sea otters lack blubber, and instead rely on a dense fur coat and elevated metabolism for warmth. To meet its energy requirements, the average adult sea otter eats 20 to 30 percent of its body mass in food each day, including marine invertebrates, sea urchins, and crabs.

Mating and pupping can occur throughout the year, however pupping typically peaks from October to January, and again in March and April. Females give birth to only one pup and solely provide care to that pup for approximately six months until weaning (Tinker et al. 2017; USFWS 2014b).

Eastern Pacific Harbor Seal

Harbor seals are known to occur in temperate coastal habitats on the West Coast of North America from Baja California, Mexico to the Bering Sea. Tracking data has shown that most are considered non-migratory and often stay within approximately 30 miles of their natal area. The harbor seal hunt fish, shellfish and crustaceans on shallow and deep dives, depending on the type of prey. When not traveling or foraging, harbor seals will haul-out (rest) on rocks, reefs, and beaches to help regulate body temperatures, molt, give birth, and nurse. Such action typically occurs in groups to avoid predators. On the West Coast, females usually give birth in spring to summer, after which pups will nurse for four to six weeks (Seal Conservancy 2017).

During molting, harbor seals lose their fur in sheets over a period of one to two months. Because their ability to retain heat is greatly reduced during molting, harbor seals spend more time hauled-out on land [11 -12 hours/day as compared to 8 hours/day during the non-breeding and non-molting season National Park Service 2018)] and less time in the water (Seal Conservancy 2017). In southern California, molting occurs between late April and early June (Seal Conservancy 2017) and in northern California, between June and the end of July (Vanderhoof and Allen 2005). In Santa Cruz, the molting season is expected to be intermediate between these locations.

California Sea Lion

California Sea Lions are known to occur on the West Coast from Alaska to central Mexico. They live in shallow waters, with a preference for beaches or rocky coves for breeding and haul-out sites. They are also known to use harbor docks, jetties and buoys. Breeding typically occurs from the Channel Islands in Southern California to central Mexico. Male sea lions migrate to feeding areas in the winter while females remain with the pups at breeding colonies until the pups have weaned. The breeding season occurs from late June to early August. Most pups are

born from May to June and rely on the mother for nursing and feeding activities for up to a year (Marine Mammal Center 2022).

California sea lions are visitors to the harbor, using the harbor for foraging and occasionally using the docks and other features within the Study Area as haul-out sites. Large numbers of California sea lions may be present in the harbor waters when fish runs occur within the harbor. (Weather, currents, seasonal upwelling conditions, and other oceanographic factors periodically bring anchovies, sardines, and other prey species into the harbor, in turn drawing great numbers of birds and marine mammals.)

Appendix E.5 Bird Species Observed by Habitat Type

Habitat	Aquatic/ Riverine	Wetlands	Riparian	Sandy Beach/ Mudstone	Coast Live Oak Woodland and Forest	Non-native Grassland/ Coastal Terrace Prairie	Non-native Forest	Ruderal/ Developed/ Landscaped
Accipiter species			X		X	X	X	X
American Coot *Fulica americana*	X							
American Crow *Corvus brachyrhynchos*					X	X	X	X
American Robin *Turdus migratorius*			X				X	
American Kestrel *Falco sparverius*					X	X	X	X
American Wigeon *Mareca americana*	W							
Anna's Hummingbird *Calypte anna*			X		X		X	X
Bald Eagle *Haliaeetus leucocephalus*			X		X			
Barn Owl *Tyto alba*					X			X
Barn Swallow *Hirundo rustica*			X		X			X
Bewick's Wren *Thryomanes bewickii*		X	X		X		X	X
Black Phoebe *Sayornis nigricans*		X	X		X		X	X
Brewer's Blackbird *Euphagus cyanocephalus*						X		X

Habitat	Aquatic/ Riverine	Wetlands	Riparian	Sandy Beach/ Mudstone	Coast Live Oak Woodland and Forest	Non-native Grassland/ Coastal Terrace Prairie	Non-native Forest	Ruderal/ Developed/ Landscaped
Bushtit *Psaltriparus minimus*			X		X		X	X
California Scrub-Jay *Aphelocoma californica*			X		X		X	X
California Quail *Callipepla californica*			X		X		X	X
California Thrasher *Toxostoma redivivum*			X		X		X	X
California Towhee Melozone crissalis			X		X	X	X	X
Canada Goose *Branta canadensis*	W					W		
Chestnut-backed Chickadee *Poecile rufenscens*			X		X		X	X
Common Raven *Corvus corax*					X	X	X	X
Common Yellowthroat *Geothlypis trichas*		X	X					
Cooper's Hawk *Accipiter cooperii*			X		X	X	X	X
Double-crested Cormorant *Phalacrocorax auritus*	X	X			X			
Dark-eyed Junco *Junco hyemalis*			X		X		X	X
Downy Woodpecker *Picoides pubescens*			X		X		X	X
Eurasian Collared-Dove *Streptopelia decaocto*			X		X		X	X

Habitat	Aquatic/ Riverine	Wetlands	Riparian	Sandy Beach/ Mudstone	Coast Live Oak Woodland and Forest	Non-native Grassland/ Coastal Terrace Prairie	Non-native Forest	Ruderal/ Developed/ Landscaped
European Starling* *Sturnus vulgaris*			X		X		X	X
Fox Sparrow *Passerella iliaca*			X		X		X	X
Golden-crowned Sparrow *Zonotrichia atricapilla*			W		W		W	W
Great Blue Heron *Ardea herodias*	X	X						
Great Egret *Ardea alba*	X	X						
Great Horned Owl *Bubo virginianus*			X		X			
Hermit Thrush *Catharus guttatus*			X		X		X	X
Hooded Oriole *Icterus cucullatus*			X				X	P
House Finch *Haemorhous mexicanus*			X		X		X	X
House Sparrow *Passer domesticus*							X	X
Hummingbird species			X		X		X	X
Hutton's Vireo *Vireo huttoni*			X		X		X	
Killdeer *Charadrius vociferus*						X		X
Lesser Goldfinch *Spinus psaltria*			X		X		X	X

Habitat	Aquatic/ Riverine	Wetlands	Riparian	Sandy Beach/ Mudstone	Coast Live Oak Woodland and Forest	Non-native Grassland/ Coastal Terrace Prairie	Non-native Forest	Ruderal/ Developed/ Landscaped
Lincoln's Sparrow *Melospiza lincolnii*						W		
Mallard *Anas Platyrhynchos*	X							
Mourning Dove *Zenaida macroura*			X		X	X	X	X
Nuttall's Woodpecker *Dryobates nuttallii*			X		X		X	X
Oak Titmouse *Baeolophus inornatus*			X		X		X	X
Orange-crowned Warbler *Oreothlypis celata*			X		X		X	X
Pacific-slope Flycatcher *Empidonax difficilis*			X		X		X	X
Peregrine Falcon *Falco peregrinus*	X			X		X		X
Pied-billed Grebe *Podilymbus podiceps*	X							
Purple Finch *Haemorhous purpureus*			X		X		X	X
Pygmy Nuthatch *Sitta pygmaea*			X		X		X	X
Red-shouldered Hawk *Buteo lineatus*			X		X		X	
Red-tailed Hawk *Buteo jamaicensis*					X	X	X	X
Red-winged Blackbird *Agelaius phoeniceus*			X			X		X

Habitat	Aquatic/ Riverine	Wetlands	Riparian	Sandy Beach/ Mudstone	Coast Live Oak Woodland and Forest	Non-native Grassland/ Coastal Terrace Prairie	Non-native Forest	Ruderal/ Developed/ Landscaped
Rock Pigeon* *Columba livia*								X
Ruby-crowned Kinglet *Regulus calendula*			W		W		W	W
Ruddy Duck *Oxyura jamaicensis*	X							
Savannah Sparrow *Passerculus sandwichensis*						X		
Say's Phoebe *Sayornis saya*						W		
Song Sparrow *Melospiza melodia*			X		X	X	X	X
Spotted Towhee *Pipilo maculatus*			X		X		X	X
Steller's Jay *Cyanocitta Stelleri*			X		X		X	X
Turkey Vulture *Cathartes aura*						X		X
Violet-green Swallows *Tachycineta thalassina*			X		X		X	X
Western Gull *Larus occidentalis*	X			X				X
Western Meadowlark *Sturnella neglecta*						X		
White-crowned Sparrow *Zonotrichia leucophrys*			X			X	X	X
White-tailed Kite *Elanus leucurus*					X	X		X

Habitat	Aquatic/ Riverine	Wetlands	Riparian	Sandy Beach/ Mudstone	Coast Live Oak Woodland and Forest	Non-native Grassland/ Coastal Terrace Prairie	Non-native Forest	Ruderal/ Developed/ Landscaped
Wilson's Warbler *Cardellina pusilla*			**X**		**X**		**X**	**X**
Wrentit *Chamaea fasciata*			**X**		**X**		**X**	**X**
Yellow-rumped Warbler *Setophaga coronata*			**W**		**W**		**W**	**W**

* = Non-native
W = Wintering

Appendix F.

Cultural Resources – Prehistoric and Post-European Contact Cultural Chronology of Central California

This page intentionally left blank.

Cultural Resources – Prehistoric and Post-European Contact Cultural Chronology of Central California

This appendix has been prepared to support the Cultural Resources analysis for Coastal Rail Trail Segments 8 and 9 by providing additional detail regarding the cultural chronology for the Central Coast and Project corridor.

Prehistoric Chronology and Pre-European Contact

Following Jones et al. (2007:137), the prehistoric cultural chronology for the Central Coast can be generally divided into six periods: Paleo-Indian (ca. 10000–8000 before common era [BCE]), Millingstone/Early Archaic (8000–3500 BCE), Early (3500–600 BCE), Middle (600 BCE–1000 common era [CE]), Middle-Late Transition (1000–1250 CE), and Late (1250 CE–European contact [ca. 1769 CE]).

Several chronological sequences have been devised to understand cultural changes along the Central Coast from the Millingstone period to contact. Jones (1993) and Jones and Waugh (1995) presented a Central Coast sequence that integrated data from archaeological studies conducted since the 1980s. Three periods are presented in their prehistoric sequence subsequent to the Millingstone period: Early, Middle, and Late periods. More recently, Jones and Ferneau (2002:213) updated the sequence following the Millingstone period as follows: Early, Early-Middle Transition, Middle, Middle-Late Transition, and Late periods. The archaeology of the Central Coast subsequent to the Millingstone period is distinct from that of the Bay Area and Central Valley, and the region has more in common with the Santa Barbara Channel area during the Middle and Middle-Late Transition periods but few similarities during the Late period (Jones and Ferneau 2002:213).

Paleo-Indian Period (ca. 10,000–8000 BCE)

When Wallace developed the Early Man horizon (referred to herein as the Paleo-Indian period) in the 1950s, little evidence of human presence along the California coast prior to 6000 BCE existed. Archaeological work in the intervening years has identified numerous sites older than this date, and it is likely that more Paleo-Indian coastal sites are presently under water as it is estimated that 10,000 years ago sea levels were 15 – 20 meters lower than sea levels are today (Bickel 1978:7).

Most of the earliest accepted dates for occupation within the Central Coast are located in San Luis Obispo County. CA-SLO-1764 (Lebow et al. 2001), Cross Creek (CA-SLO-1797; Jones et al. 2002), and CA-SLO-832 (Jones and Ferneau 2002) near Pismo Beach, have produced radiocarbon dates from approximately 9,000 years ago (Jones and Ferneau 2002). One occupation site located in the Monterey Bay area, the Scotts Valley Site (CA-SCR-177), and one occupation site located in southern Santa Clara Valley (unnamed), have produced debated radiocarbon dates more than 9,000 years ago, ranging from 7,180 to 10,080 years ago (Cartier 1989; Fitzgerald and Porcassi 2003).

Typically, artifact assemblages from the Paleo-Indian period lack groundstone implements and an abundance of faunal remains. However, assemblages at CA-SLO-1764 and CA-SLO-1797 indicate early use of millingstone technology alongside flaked stone artifacts (Lebow et al. 2001; Jones et al. 2002). Flaked stone tools are common in this period, such as the Eccentric crescent, present in CA-SCR-177 abundantly, which is thus far exclusive to the Paleo-Indian period (Cartier 1989). Furthermore, this period shows use of large side-notched points of the Central Coast Stemmed series which date to as early as 8,000 years ago (Justice 2002). Points of this type have been recovered at Cross Creek (CA-SLO-1797; Jones et a. 2002) and Little Pico Creek (CA-SLO-175; Jones and Waugh 1995). Additionally, a fluted

point was reportedly found on the surface in Nipomo, San Luis Obispo County (Mills et al. 2005; Jones et al. 2007).

Millingstone Period (8000–3500 BCE)

The Millingstone period, as defined by Wallace (1955, 1978), is characterized by an ecological adaptation to collecting suggested by the appearance and abundance of well-made milling implements. Millingstones occur in large numbers for the first time in the region's archaeological record and are even more numerous near the end of this period. Aside from millingstones, typical artifacts during this period include crude core and cobble-core tools, flake tools, large side-notched projectile points, and pitted stones (Jones et al. 2007).

The Millingstone period within the Central Coast somewhat corresponds with King's (1990) Early period of the Santa Barbara Channel area, although King's Early period starts later and lasts longer (5500 –1350 BCE). The Cross Creek site (CA-SLO-1797) in San Luis Obispo County has a Millingstone occupation component that returned radiocarbon dates ranging between 9,500–4,700 years ago. This site represents one of the oldest expressions of the Millingstone pattern (Jones et al. 2002; Jones et al. 2007). Within the Elkhorn Slough of the Monterey Bay Area, CA-MNT-229 produced reliable radiocarbon dates between 6,200–4,000 BCE (Jones and Jones 1992), and younger expressions of the pattern can be found in CA-MNT-1232/H and CA-SCR-177 in the Monterey Bay area (Jones et al. 2007).

No less than 42 sites dating to this period have been identified in various settings, including rocky coasts, estuaries, and nearshore interior valleys (Jones et al. 2007). The larger sites usually contain extensive midden deposits, possible subterranean house pits, and cemeteries. Most of these sites probably reflect intermittent use over many years of local cultural habitation and resource exploitation, with an emphasis on marine resources. Evidence at Elkhorn Slough (CA-MNT-229) confirms an early preference for estuarine and lacustrine settings. A lack of shell beads and flaked obsidian tools suggests low intensity inter-regional exchange (Jones and Jones 1992).

Early Period (3500–600 BCE)

An extensive series of shoreline midden deposits within the Central Coast region date to the Early period, suggesting an increase in occupation of the open coast (Jones 2003; Jones and Waugh 1995, 1997). These include estuarine sites in San Luis Obispo County (CA-SLO-165) and open-coast sites in the Monterey Bay area (CA-MNT-73, CA-MNT-108, and CA-MNT-1228). Sites dating to this period are marked by large lithic artifact assemblages consisting of Central Coast Stemmed Series and side-notched projectile points. Square-stemmed and side-notched points have also been found in deposits at Willow Creek in Big Sur (CA-MNT-282), and Little Pico II on the San Luis Obispo coast (CA-SLO-175) (Jones and Ferneau 2002). This trend, first identified by Rogers (1929), has since become apparent at numerous sites throughout the Central Coast. In many cases, manifestations of this trend are associated with the establishment of new settlements (Jones et al. 2007).

The material culture recovered from Early period sites within the Central Coast region provides evidence for continued exploitation of inland plant and coastal marine resources. Artifacts include milling slabs and hand stones, as well as mortars and pestles, which were used for processing a variety of plant resources. Bipointed bone gorge hooks were used for fishing. Assemblages also include a suite of *Olivella* beads, bone tools, and pendants made from talc schist. Square abalone shell (*Haliotis spp.*) beads have been found in Monterey Bay but not in the Big Sur or San Luis Obispo areas (Jones and Waugh 1997:122).

Shell beads and obsidian are hallmarks of the trade and exchange networks of the central and southern California coasts. The archaeological record indicates a substantial increase in the abundance of obsidian at Early period sites in the Monterey Bay and San Luis Obispo areas (Jones and Waugh 1997:124–126). Obsidian trade continued to increase during the following the Middle period.

The Early Period shows an increase in hunting and fishing over the Millingstone period, as seen in SLO-165, with rabbits and fish remains present in greater concentrations (Jones et al. 2007).

Middle Period (600 BCE–1000 CE)

The Middle period saw a population increase as evidenced by the increased number of new settlements spanning throughout the Central Coast. Newly established settlements of this period include CA-MNT-108, CA-MNT-391, CA-MNT-1228, CA-SCR-7, CA-SLO-165, and CA-SlO-175 (Jones et al. 2007). During this period, evidence from CA-MNT-391 shows a preference for burials in a flexed position and associated burial items, including projectile points and bone gorges. *Olivella* shell beads are found in abundance associated with burials dating to the Middle Period (Hildebrandt 1997; Jones et al. 2007).

The Middle period is generally characterized by a shift in subsistence patterns, including more abundant use of mortars and pestles as well as higher use of larger stemmed and notched projectile points. Additionally, the first appearance of circular shell and bone fishhooks and notched net sinkers were observed within sites dating to this period. Evidence shows that marine resources were still abundantly utilized, with an increase in pinniped faunal remains, such as fur seals (Jones and Ferneau 2002; Boone 2012). Faunal assemblages show that marine diets were supplemented with small mammals, such as rabbits (Jones et al. 2007). Additionally, evidence from macro botanical analysis indicates a shift from small seeds to a heavy reliance on acorns (Wohlgemuth 1996; Hildebrandt 1997).

Middle-Late Transition Period (1000–1250 CE)

The Middle-Late Transition period is marked by relative instability and change, with major changes in diet, settlement patterns, and interregional exchange. The relatively ubiquitous Middle period shell midden sites found along the Central Coast were abandoned by the end of the Middle-Late Transition period; therefore, most Transition period and Late period sites were first occupied at this time (Jones and Ferneau 2002:213, 219). Instead of large year-round habitation patterns, Middle-Late and Late period sites show smaller seasonal settlements (Boone 2012). CA-SLO-239 has been tentatively dated to the Middle-Late Transition Period and contains the only residential feature, a circular house floor (Jones et al. 2007).

During the Middle-Late Transition period within the Central Coast region, projectile points diagnostic of both the Middle and Late periods are found (Jones and Ferneau 2002:217). The points include large, contracting-stemmed types typical of the Middle period, as well as Late period small, leaf-shaped points, which likely reflect the introduction of the bow and arrow.

Late Period (1250 CE–European Contact)

Late period sites are marked by small, finely worked projectile points, such as Desert side-notched and Cottonwood points, as well as temporally diagnostic shell beads. Although shell beads were typical of coastal sites, trade brought many of these maritime artifacts to inland locations, especially during the latter part of the Late period (Jones et al. 2007).

Common artifacts identified at Late period sites include bifacial bead drills, bedrock mortars, hopper mortars, lipped and cupped *Olivella* shell beads, and steatite disk beads. The presence of beads and

bead drills suggest that low-level bead production was widespread throughout the Central Coast region (Jones et al. 2007).

Unlike the large Middle period shell middens, Late period sites are more frequently single-component deposits. There are also more inland sites, with fewer and less visible sites along the Pacific shore during the Late period. However, one Late period shell midden has been identified on the coast in Morro Bay (CA-SLO-23). The settlement pattern and dietary reconstructions indicate a lesser reliance on marine resources than observed for the Middle and Middle-Late Transition periods, as well as an increased preference for deer and rabbit (Jones 2003). An increase in sites with bedrock mortars during the Late period further suggests that nuts and seeds began to take on a more significant dietary role (Jones et al. 2007).

Post-European Contact

Post-European contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States. By the 1860s century, Santa Cruz had grown into a thriving, yet isolated, whose economy centered on the timber harvesting, lime production, and leather tanning. The development of local railroads beginning in the 1870s created more reliable connections to the outside world and further stimulated local industry. As established industries, especially those dependent on timber harvesting, began to fade around the turn of the twentieth century, the Southern Pacific Santa Cruz Branch Rail Line remained an important passenger route and proved instrumental in the growth of a New Santa Cruz centered on a tourist economy that fueled local growth through the 1950s.

Spanish Period (1769–1822)

During the Spanish Period, Spanish explorers made sailing expeditions along the coast of what was then known as Alta (upper) California between the mid-1500s and mid-1700s. In 1542, while in search of the legendary Northwest Passage, Juan Rodríquez Cabríllo recorded a visit to the Santa Barbara area. Sebastian Vizcaíno also conducted exploration of the coast in 1602 and named the Santa Barbara Channel when his ship entered it on the feast day of Saint Barbara (Kyle 2002). The Spanish crown laid claim to Alta California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885; Gumprecht 1999).

By the eighteenth-century Spain developed a three-pronged approach to secure its hold on the territory and counter against other foreign explorers. The Spanish established military forts known as presidios, as well as missions and pueblos (towns) throughout Alta California. The 1769 overland expedition by Captain Gaspár de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá established the Presidio of San Diego as the first Spanish settlement in Alta California in 1769. Franciscan Fr. Junípero Serra also founded Mission San Diego de Alcalá that same year, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823. In July 1769, the governor of Baja California, Gaspar de Portolá, departed with an expedition from San Diego to locate Monterey Bay and passed through

present-day Santa Cruz (Breschini 2000). Shortly thereafter, in September 1791, Mission Santa Cruz was established on the banks of the San Lorenzo River. Mission Santa Cruz quickly conscripted the surrounding Ohlone population and, by 1796, included 523 neophytes (i.e., Ohlone who converted to Mission activities). At its peak of operation, the Mission had 8,000 head of cattle and produced wheat, barley, beans, corn, and lentils for consumption and trade (California Missions Resource Center 2018).

In 1797, another colonial institution, Villa de Branciforte, was established ear Mission Santa Cruz as one of only three secular pueblos operated in California under Spanish colonial rule (Heron 1997). The Spanish government established Villa de Branciforte to create a self-sufficient settlement populated by retired soldiers, craftsmen, and farmers who could mobilize and defend the coast of Alta California from foreign invasion. However, the colonial government generally viewed Villa de Branciforte as a failure. Early settlers generally lacked the skills to be self-sufficient farmers. When news spread that the French pirate, Hippolyte de Bouchard, had raided Monterey, the residents of Branciforte, instead of defending the Mission, responded by looting much of its assets.

A major emphasis during the Spanish Period in California was the construction of missions and associated presidios to convert the Native American population into Christianity and conscript them into the communal economic enterprise of the missions. Growth was also achieved by luring settlers to pueblos or towns with certain incentives, but just three pueblos were established during the Spanish Period, including two that remain as California cities, San José and Los Angeles. Spain began making land grants in 1784, typically to retiring soldiers, although the grantees were only permitted to inhabit and work the land. The land titles technically remained property of the Spanish king (Livingston 1914).

Mexican Period (1822–1848)

During the Mexican Period, Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, Mexico won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Gutierrez and Orsi 1998).

In 1834, the California missions were secularized, and Mission Santa Cruz lands came under the control of Villa de Branciforte (Kyle 2002:448-450). Extensive land grants were established through much of California, including what is now Santa Cruz County during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. Commonly, former soldiers and well-connected Mexican families were the recipients of these land grants, which now included the title to the land (Friends of Santa Cruz State Parks 2022).

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising population of Cailfornia contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

American Period (1848–Present)

During the American Period, The United States went to war with Mexico in 1846. During the first year of the war, John C. Fremont traveled from Monterey to Los Angeles with reinforcements for Commodore Stockton, and evaded Californian soldiers in Santa Barbara's Gaviota Pass by taking the route over the San Marcos grade instead (Kyle 2002). The war ended in 1848 with the Treaty of Guadalupe Hidalgo, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through 1850s. The discovery of gold in the northern part of the state led to the Gold Rush beginning in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the 1850s cattle boom, rancho vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom (Jelinek 1999).

A severe drought in the 1860s decimated cattle herds and drastically affected rancheros' source of income. In addition, property boundaries that were loosely established during the Mexican era led to disputes with new incoming settlers, problems with squatters, and lawsuits. Rancheros often were encumbered by debt and the cost of legal fees to defend their property. As a result, much of the rancho lands were sold or otherwise acquired by Americans. Most of these ranchos were subdivided into agricultural parcels or towns (Dumke 1994).

City and County of Santa Cruz

During the first decades of the American period (1848-Present), Santa Cruz's early economy was centered largely on logging, lime production, tanneries, and commercial fishing. An increased need for building materials spurred by the flourishing post-Gold Rush-era construction boom in San Francisco allowed logging and lime production in Santa Cruz to thrive (City of Santa Cruz 2011, 2018). The success of local industry supported new residential and commercial development. In the 1860s, two commercial districts emerged. The first was a tourist center clustered near the beach, while the other, the downtown business center, was located inland.

Despite the early success of local industry, Santa Cruz County was not served by any railroads until the 1870s, limiting the economic growth of the geographically isolated region. With limited overland routes, piers and wharves remained a key link to the outside world in the years before the first local railroads opened.

Local businessmen grew increasingly convinced the profitability of their operations would depend on the availability of more cost-effective shipping via rail (Lehmann 2000). As a result of local efforts during the 1870s, three railroads serving Santa Cruz were begun or constructed. Of these, the first to open was the Santa Cruz & Felton Railroad, which was organized in 1874 and began service between its namesake communities the following year. The Santa Cruz Railroad began construction in 1873 and started running trains between Santa Cruz and Pajaro in 1876, including the entirety of the current undertaking's Project corridor. Finally, construction of the South Pacific Coast Railroad began from San José in 1876, but the line to Santa Cruz was not complete until 1880 (Abandoned Rails 2022). In 1883, Southern Pacific (SP) acquired the Santa Cruz Railroad, eventually renaming the route on which the current Project corridor is located as the Santa Cruz Branch. The history of the Santa Cruz Branch rail route is discussed further below in Section 4.1.5, *Santa Cruz Branch Railroad*.

Santa Cruz continued to expand in the final two decades of the nineteenth century.

Around the turn of the twentieth century, overharvesting felled much of the old growth in the Santa Cruz Mountains, ultimately undercutting the timber industry. However, thanks to reliable rail connections to the urban centers of the San Francisco Bay Area, tourism emerged as a robust alternate economic engine just as lumber and other industries declined. Businessman Fred Swanton was instrumental in the reorientation of local commerce and opened a casino and hotel on the waterfront along what is now Segment 8 of the current undertaking.

With freight trips declining, Southern Pacific began operating more frequent scenic and tourist excursions on the Santa Cruz Branch and, by 1918, ran 18 passenger and trains daily to Santa Cruz, in addition to 6 freight trains. In 1927, Southern Pacific inaugurated the so-called Sun Tan Special, a weekend excursion train that brought as many as 5,000 visitors a day from San José, San Francisco, and Oakland. Aside from the beach, the prime attraction was the Seaside Company's Water Carnivals at the Plunge. The Sun Tan Special brought a reliable stream of tourists to Santa Cruz, and their spending helped to insulate the community from some of the worst hardships of the Great Depression.

The rise of the automobile in the 1930s, however, led to a gradual decline of ridership starting in the 1930s, and, as discussed in more detail below, the Sun Tan Special made its last run in in 1960 (Lehmann 2000; Santa Cruz Trains 2019). In the mid-twentieth century, new tourism-related development was characterized by the growing number of motels and motor courts constructed in and around the city, which supplanted the more-regal hotels that had defined Santa Cruz tourist lodging in earlier decades (Lehmann 2000).

By the late-1950s, the wave of tourists that had buoyed Santa Cruz's had begun to ebb somewhat. To reverse the decline, local boosters seized on the University of California (UC) Board of Regents' plans for expansion as a potential source of renewed economic growth. (Domhoff 2022).

Santa Cruz's growth rate accelerated steadily following the opening of the university in 1965. By 1970, the city's population reached 32,000, an increase of approximately 25 percent over the previous decade's mark. In 1980, the city's growth pushed the population another 30 percent higher, to about 41,000. This development had little effect in the sections of the city immediately flanking the Project corridor, given the area was mostly built out by the 1950s (NERTOnline 1952).

Project Corridor

Segment 8 of the Project Corridor is entirely within the City of Santa Cruz. Segment 9 of the Project corridor begins within the City of Santa Cruz from the SLR Trestle Bridge to the Santa Cruz Harbor, and then continues throughout the unincorporated community of Live Oak.

Live Oak is located between the City of Santa Cruz on the west and the City of Capitola on the east. European settlement of the area began in 1837 with the establishment of two Mexican ranchos. The Live Oak area retained the rural character of the ranchos into the late nineteenth century. In 1873, the area's first school, Live Oak School, was established and soon emerged as a "social hub" for the rural community (Wilshusen n.d.). Historical topographical and Sanborn fire insurance maps show the community remained essentially undeveloped into the early twentieth century. While much of the existing street grid was laid out by the late 1920s, development remained sparse in the Project vicinity.

The Twin Lakes area bounded roughly by the Santa Cruz Harbor on the west, the Santa Cruz Branch Rail Line on the north, Rodeo Gulch on the east, and Monterey Bay on the south. Early development in Twin Lakes began in the 1890s after Southern Pacific established a rail stop in the area and a summer retreat for Baptists was established. In the first decades of the twentieth century, an influx of permanent and

seasonal residents drove new development in the Twin Lakes area and soon outnumbered the small permanent Baptist settlement there (Santa Cruz Trains 2014).

Passenger rail service to the Twin Lakes station ceased in the late 1930s. In 1955, the State of California established Twin Lakes State Beach, a park that comprises the beach and Schwan Lagoon. In 1963, construction of Santa Cruz Small Craft Harbor physically split the beach in two, though it continues to operate as single park (Santa Cruz Trains 2014).

Historical aerial photographs show that urbanization in Live Oak and Twin Lakes area accelerated in the post-World War II era. By 1968, the current pattern of development was established, featuring mostly residential properties with pockets of commercial, industrial, and other uses (NETROnline 1952; 1968; 2018).

Appendix G.

Traffic Technical Memorandum for Coastal Rail Trail Segments 8 and 9

This page intentionally left blank.

Rincon Consultants, Inc.

2511 Garden Road, Suite C-250
Monterey, California 93940

831 333 0310

info@rinconconsultants.com
www.rinconconsultants.com

August 26, 2022
Project No: 20-09792

Kelso Vidal
California Department of Transportation
District 5
50 Higuera Street
San Luis Obispo, California 93401
Via email: kelso.vidal@dot.ca.gov

Subject: Coastal Rail Trail Segments 8 and 9, Traffic Technical Memorandum

Dear Mr. Vidal:

Rincon Consultants, Inc. is pleased to submit this Traffic Technical Memorandum for the proposed Coastal Rail Trail Segments 8 and 9 in the City of Santa Cruz (City) and Santa Cruz County (County). The purpose of this memorandum is to detail transportation impacts associated with construction and operation of the proposed trail.

Project Description

The City of Santa Cruz (City), in coordination with the County of Santa Cruz (County) and the Santa Cruz County Regional Transportation Commission (RTC), is proposing the Coastal Rail Trail Segments 8 and 9 Project (Project) to be developed along RTC-owned rail corridor and City streets right-of-way, that generally parallels the coastline in central Santa Cruz County (see Figure 1, *Regional Location*).

The Project is a 2.2-mile bicycle and pedestrian system proposed to extend along the RTC-owned railroad corridor and City streets right-of-way from the Beach Street/Pacific Avenue Roundabout on the west to the eastern side of 17th Avenue on the east, excluding the recently constructed San Lorenzo River (SLR) Trestle Bridge Improvements (see Figure 2, *Coastal Rail Trail Segments 8 and 9*). Segment 8 (0.6 mile) is comprised of a Class IV on street bicycle system and pedestrian sidewalk improvements. Segment 9 (1.6 miles) is comprised of a multi-use bicycle and pedestrian trail.

The trail would be Americans with Disabilities Act (ADA)-accessible and intended for pedestrians and bicyclists only. Although electric bicycles with a rating limited to 20 miles per hour would be allowed in accordance with California law (Assembly Bill 1096),[1] motorized vehicles would not be allowed. Electronic skateboards with a rating limited to 20 miles per hour would be allowed as well. Depending on the volume of users, other speed limits may be imposed and indicated on posted signage. Flexible bollards could be installed at some roadway crossings to keep unauthorized motorists off the trail. The Project would not include installation of parking lots or other parking improvements, except the

[1] According to Assembly Bill 1096, which took effect in January 2016, electric bicycles (e-bikes) are no longer regulated like mopeds, and the same rules of the road apply to both e-bikes and human-powered bicycles. Class 3 E-bikes go up to 28 mph and are not allowed on paths. https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160AB1096

conversion of three standard parking spaces to two ADA-accessible spaces at the Simpkins Swim Center parking lot.

Roadway crossings would occur at several roads, including Mott Avenue, Seabright Avenue, 7th Avenue, and 17th Avenue. All roadway crossings include new sidewalks, ADA compliant curb ramps, roadway lighting, signage, and striping improvements on the roadway and trail. Additional improvements unique to each crossing are identified below.

- Mott Avenue
- Bulb-Outs
- Northbound contraflow bike lane (bike only access from Murray Street onto trail and Mott Avenue)
- Seabright Avenue
    - Trail crossing interconnected with traffic signals
    - Dedicated right turn lane on Murray at Seabright
    - Chicanes (curves added by design) to slow trail users before the intersection
- 7th Avenue
    - Rectangular Rapid-Flashing Beacons (RRFBs) placed in advance of the crossing in each direction to warn drivers
    - Relocated rail crossing equipment
    - Chicanes to slow trail users before the intersection
- 17th Avenue
    - Raised median flanking the trail as it crossed roadway
    - RRFBs placed in advance of the crossing in each direction to warn drivers

The only proposed roadway improvement would occur at the Seabright Avenue/Murray Street intersection, where a dedicated right turn lane from westbound Murray Street to northbound Seabright Avenue would be added to maintain traffic flow on Murray Street. The existing signal would be modified to add phasing and equipment for the trail crossing signal and the right turn lane. Modification or supplement to the existing distinguishable message sign would be included, so westbound traffic on Murray Street would be instructed to yield to pedestrians when the trail crossing is active.

This memorandum evaluates the *Proposed Project: Trail next to Rail line (Ultimate Trail Configuration)*, as well as an *Optional First Phase: Trail on the Rail line (Interim Trail)*. The Ultimate Trail Configuration would be constructed on the inland side of the existing railroad tracks in Segment 9, except for the short portion on the east end of the Project where the trail would switch to the coastal side. The Interim Trail would involve all or a portion of the trail in Segment 9 being constructed in approximately the same location of the railroad tracks by removal of the rails and ties. Transportation impacts would be the same for the Ultimate Trail Configuration and the Interim Trail. Therefore, for the purposes of this analysis, both alignments are referred to as the Project.

Purpose and Need

The purpose of the project is to provide an ADA-accessible bicycle/pedestrian path for active transportation, recreation, and environmental and cultural education along the rail corridor, consistent with the Monterey Bay Sanctuary Scenic Trail (MBSST) Network Master Plan. The Project includes the following objectives:

1. Provide a continuous public trail with continuity in design along the Santa Cruz Branch Line railroad corridor and connecting spur trails in Santa Cruz County.
2. Develop the trail so future rail transportation service along the corridor is not precluded.
3. Maximize ocean views and scenic coastal vistas along a coastal alignment for experiencing and interpreting the Monterey Bay National Marine Sanctuary (sanctuary), and historical and agricultural landscapes.
4. Maximize safety and serenity for experiencing and interpreting the sanctuary and landscapes by providing a trail separate from roadway vehicle traffic.
5. Minimize trail impacts to private lands, including agricultural, residential, and other land uses.
6. Minimize trail impacts to sensitive habitat areas and special-status plant and animal species.
7. Comply with requirements of local, state, and federal agencies with jurisdiction

Affected Environment

All of Segment 8 and the western part of Segment 9 are in the City of Santa Cruz, California, in Santa Cruz County, approximately 75 miles south of San Francisco and 340 miles north of Los Angeles. Largely built out, the city is on the northern edge of Monterey Bay and is bounded on the southwest by the Pacific Ocean and, on the inland side, by the forested Santa Cruz Mountains. The eastern part of Segment 9 is in unincorporated Santa Cruz County and includes a trail connection to Simpkins Swim Center and Twin Lakes State Beach, which is under the jurisdiction of California State Parks.

The Project corridor includes an active rail line in Segment 8. Roaring Camp Railroad operates a tourist train from Felton to the Santa Cruz Boardwalk during the tourist season (May through September) and during the winter holidays. Segment 9 does not have train usage at this time. From west to east, the Project corridor (Segment 8) extends along Beach Street (IV Cycle Track and sidewalks) to the SLR Trestle Bridge, which has an existing multi-purpose trail and not part of the project. East of the SLR Trestle Bridge, the Project corridor (Segment 9) follows the Santa Cruz Branch Rail Line corridor, which extends along the north side of Murray Street across the Santa Cruz Harbor on the Woods Lagoon Railroad Bridge. From there, the Project corridor continues along the Santa Cruz Branch Rail Line corridor across 7th Avenue, through upper Twin Lakes State Beach, to the eastern side of 17th Avenue. Segment 8 largely consists of existing vehicle, pedestrian, and bicycle infrastructure adjacent to the Santa Cruz Boardwalk and Beach, while Segment 9 contains vegetation and trees surrounding the corridor.

Roadway Network and Traffic Circulation

Several local roads lead to and intersect with the Project corridor (from west to east): Pacific Avenue, Main Street, Westbrook Street, Cliff Street, Riverside Avenue, Raymond Street, Leibrandt Avenue, Park Place, and 3rd Street to Segment 8 and East Cliff Drive, Murray Street, Cayuga Street, Mountain View

Avenue, Mott Avenue, Seabright Avenue, Watson Street, Bronson Street, Owens Street, 7th Avenue, Live Oak Avenue, El Dorado Avenue, and 17th Avenue to Segment 9.

Existing user conflicts near the Project corridor primarily occur in Segment 8 along Beach Street where pedestrian, bicycle, and vehicular traffic is congested due to the Santa Cruz Boardwalk, large parking areas, restaurants, shopping, and beach access. According to data from the Statewide Integrated Traffic Record System, a total of 16 collisions involving bicyclists or pedestrians occurred between 2017 and 2021 on Beach Street, between the Pacific Avenue roundabout and the SLR Trestle Bridge (University of California [UC] Berkeley 2022). User conflicts also exist in Segment 9 along Murray Street, between the SLR Trestle Bridge and the Santa Cruz Harbor, where a total of nine collisions involving bicyclists or pedestrians occurred between 2017 and 2021 (UC Berkeley 2022). User conflicts are less common east of the Santa Cruz Harbor where there were only two collisions involving bicyclists or pedestrians between 2017 and 2021; one collision occurred near Eaton Street and 5th Avenue, and one collision occurred near 17th Avenue and Kinsley Street (UC Berkeley 2022).

Bicycle and Pedestrian Network

Bicycle and pedestrian activity near the Project corridor is congested along Beach Street, where there is a Class IV cycle track in the roadway and sidewalks alongside the roadway, which lead to the multi-use path across the SLR Trestle Bridge to bicycle lanes and sidewalks on East Cliff Drive.

Pedestrian activity occurs along various parts of the Project corridor. There is substantial pedestrian activity in Segment 8 where the Santa Cruz Wharf, Boardwalk, and Beach are located. Pedestrians often cross Beach Street to access these features, as well as parking, restaurants, shopping, bowling, and the arcade. As such, many intersections along Beach Street feature pedestrian signage and marked crosswalks. Pedestrian activity also occurs in Segment 9, particularly near the Santa Cruz Harbor and on existing trails in Twin Lakes State Beach.

Bicycle activity occurs along various parts of the Project corridor, most notably using the Class IV cycle track along Beach Street in Segment 8 and along Murray Street and Eaton Street in Segment 9, as well as the intersections of major cross streets such as Seabright Avenue, 7th Avenue, and 17th Avenue (RTC 2022). Murray Street currently offers bike lanes from East Cliff Drive to 7th Avenue. From there, the bike lanes continue both north and south along 7th Avenue. The majority of 17th Avenue also features a bike lane that provides a connection to the Simpkins Swim Center and Twin Lakes State Beach. Other roadways in the vicinity of the Project corridor featuring bike lanes include Pacific Avenue, Riverside Avenue, 3rd Street, East Cliff Drive, Seabright Avenue, Mariner Park Way, Lake Avenue, and Brommer Street (RTC 2022).

Environmental Consequences

Project Construction

Construction of the Project could introduce a temporary hazard due to the potential for conflict between construction vehicles and existing traffic (vehicular, bicycle, pedestrian), and due to potential temporary lane closures that could occur periodically during construction (e.g., constructing the trail's roadway crossings). Along Segment 8, pedestrians would be detoured onto the Boardwalk path or to the sidewalk on the north side of Beach Street. Along Segment 9, pedestrian traffic would be detoured to the opposite side of the roadway where shoulder work would occur, such as along Mott Avenue, Seabright Avenue, 7th Avenue, or 17th Avenue. Construction related closures on Segment 8 would not

result in vehicle detours but may require closure of one lane on Beach Street while working on improvements. Bicycle and vehicle traffic would co-exist along Segment 8 on Beach Steet with "Share the Road" and/or "Bike May Use Full Lane" signs. Westbound bicycle traffic will be detoured around Beach Street as it is a one-way street eastbound. The same would occur along Segment 9 where shoulder work occurs. Vehicle lane closures and bicyclist and pedestrian detours are anticipated to result in a time delay.

Construction activities are not anticipated to result in any long-term road or lane closures. Construction and equipment staging, and stockpiling would take place on existing disturbed or paved areas within the Santa Cruz Branch Rail Line corridor and City right-of-way. Other potential staging areas could include vacant land uses in the vicinity of the Project corridor. Construction staging would be temporary in nature and any equipment utilized during construction would be removed after completion of the Project.

Project Operation

One of the Project objectives is to improve safety by providing a trail that is separate from vehicular traffic. Therefore, as a project that introduces a Class I transportation corridor, the Project would have no significant permanent transportation impacts. Rather, the Project would result in net benefits by providing active transportation opportunities and removing vehicles from area roadways. The proposed trail is anticipated to reduce vehicle trips providing the opportunity to ride bicycles or walk instead of driving. Further, the Project integrates improvements along Segment 8 that would reduce user conflicts, such as implementation of more high visibility striping and surface improvements for the existing bike lane and crosswalk. The Project would include "curb" separators (3-6 inches high) between the existing bike and vehicular travel lanes. Other roadway improvements proposed as part of the Project include the addition of a dedicated right turn lane from westbound Murray Street to northbound Seabright Avenue, which would maintain traffic flow and reduce user conflicts at the intersection.

The Project would include other safety features for trail users. Retaining walls would be located in several locations along the alignment to provide the required safety distance between the trail and existing rail line. Fencing and guardrails would be installed along the sides of bridges and other areas along the trail alignment for safety and security, and safety fencing would be installed in Segment 9 to separate trail users from the rail, as needed. Operation of the Project could affect vehicular, bicycle, and pedestrian safety at roadway crossings with the introduction of new roadway crossings.

A variety of design features have been incorporated into the Project for safety and to reduce the potential for user conflicts at roadway crossings. Specifically, the roadway crossing at Seabright Avenue would include interconnected traffic signals specific to trail users and chicanes[2] to slow trail users before the intersection. Chicanes would also be incorporated at the 7th Avenue roadway crossing to ensure safety for users approaching the intersection. Rectangular rapid-flashing beacons would be placed in advance of the trail crossing in each direction on 7th Avenue and 17th Avenue to warn vehicular drivers of the potential for bicyclist and pedestrian crossings; the crossing at 17th Avenue would also feature a raised median in the center of the road as a bike and pedestrian refuge flanking the trail as it crosses the roadway to ensure the safety of users. In addition, bulb-outs would be located along Mott Avenue to extend the sidewalk into the parking lane to provide additional pedestrian space and visibility.

[2] Curves added by design

Avoidance and Minimization Measures

The following avoidance and minimization measures would be implemented as part of the Project.

Construction Measures

- Emergency personnel would be notified in advance of construction-related lane closures to ensure that alternative emergency response measures could be taken, if necessary.
- To avoid and minimize traffic impacts, truck activity and haul routes would be limited to arterial and collector roads where feasible.
- Construction signage and a flagger (as needed) would be present at the location of any lane closure or substantial construction equipment or activity, which would maintain public safety while facilitating the necessary equipment and vehicular access to the Project corridor.
- To minimize impacts from construction equipment staging, all equipment and materials would be stored, maintained, and refueled in clearly defined and designated portions of the staging areas in accordance with permit requirements.
- A traffic control plan would be implemented during construction to minimize traffic delays and detour motorists, bicycles and pedestrians when appropriate

Attachments

Figure 1 Regional Location

Figure 2 Coastal Rail Trail Segments 8 and 9

References

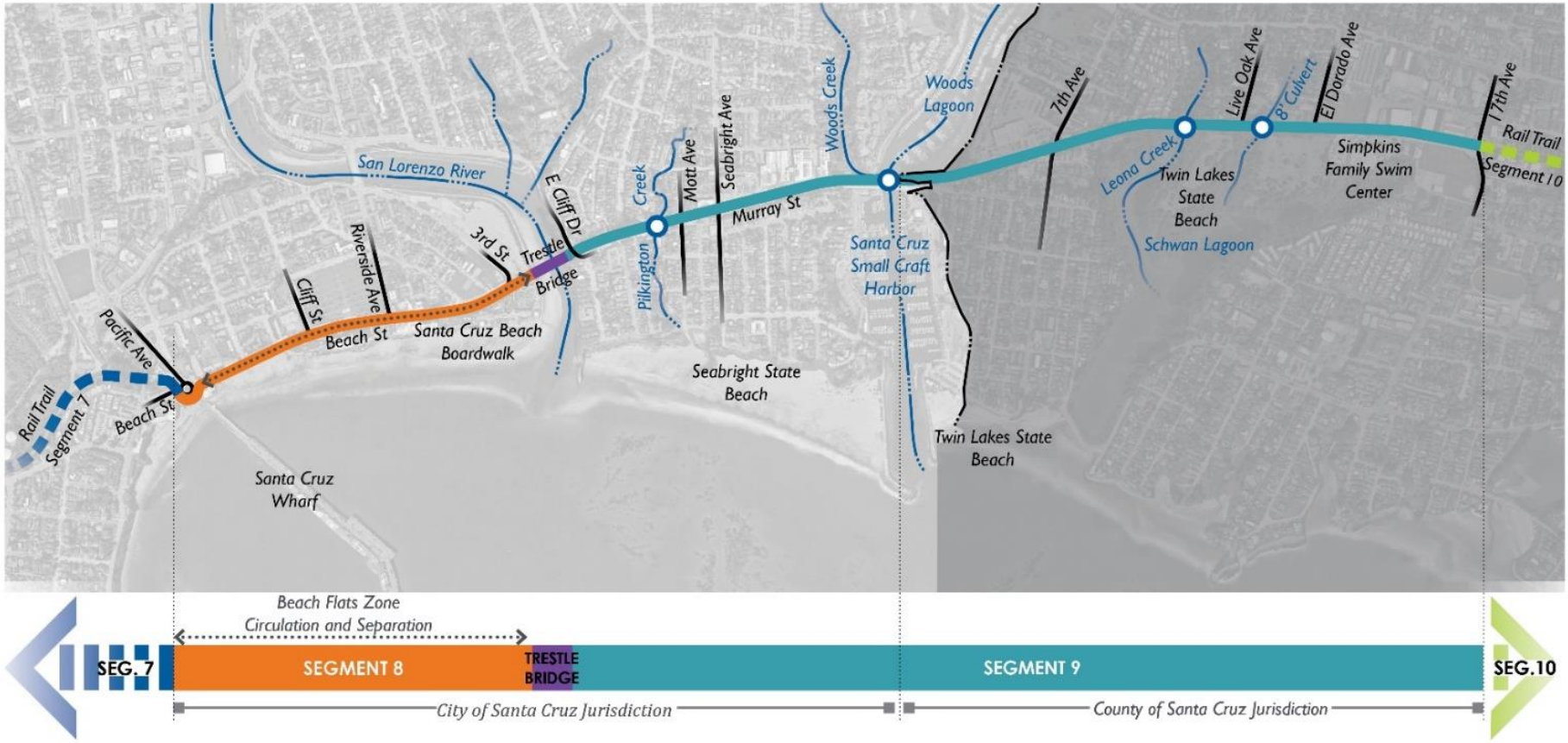
Santa Cruz County Regional Transportation Commission. 2022. Signed Bicycle Routes & Other Bikeways of Santa Cruz County. https://sccrtc.maps.arcgis.com/apps/StoryMapBasic/index.html?appid=dc90c3b75f3b4bd191277f7099cca3ff&extent=-122.2023,36.8662,-121.7773,37.0681 (accessed August 2022).

University of California at Berkley (UC Berkley). 2022. Transportation Injury Mapping System. *SWITRS GIS Map.* https://tims.berkeley.edu/tools/gismap/ (accessed August 2022).

Figure 1 Regional Location

Source: Harris & Associates, 2022.

Figure 2 Coastal Rail Trail Segments 8 and 9



Source: City of Santa Cruz. https://www.cityofsantacruz.com/government/city-departments/public-works/engineering/public-works-projects/coastal-rail-trail